SOCIO-ECONOMIC STUDY OF THE PROPOSED
SHELL OIL COMPANY PEARL MINE

INTERIM REPORT   VOLUME 3-A

Area Economy and Economic Impact

Submitted To:

THE MONTANA DEPARTMENT
OF
STATE LANDS

November 21, 1977

This report is in the preliminary Review Draft
stage. As such it represents neither the final
judgement nor the official position of the
Meadowlark Group or the State of Montana.

I. Survey and Summary of Current Economic Conditions
Within The Impact Region

The impacted region is defined as segments of Wyoming and Montana
which may reasonably be expected to be influenced by the development of
the proposed Pearl Mine by the Shell Oil Company of Austin, Texas. The
location of the proposed mine is southeast Montana in Big Horn County
for which a Shell Federal lease exists for a 541 acre tract with an
additional 60 million in-place ton of coal present with a recoverable estimate
of 38.5 million ton over a total mine life of 20 years. Although the
actual mine site is located in Montana, the impacts of development will
not be limited to Big Horn County, Montana for numerous reasons. As
such, the impacted region for the proposed Shell Pearl Mine is delineated
as Big Horn County, Montana and Sheridan County, Wyoming.

Historically and traditionally, this area has been depicted as rural
in nature with an economic base which has been primarily agrarian.
Additionally, limited manufacturing and industrial production has occurred
with sparadic mining of natural resources such as oil and gas. In recent
years, the impacted area has been exposed to significant increments in
coal mining development activities and proposed mining activities.
Unquestionably, the emergence of these mining operations and activities
have resulted in significant changes in economic base activities as well
as sociological changes.

The primary intent of this section of the report is to objectively
inspect and identify the present economic conditions and characteristics
of the total impacted area and each segment of the impacted area which has
been identified as Big Horn County, Montana and Sheridan County, Wyoming.

A. Local Labor Force and Employment

The total employment in the total impacted area increased 10.4 percent from 1970 to 1975 with annual increments for each year during this time span (Table 1). Furthermore, each segment of the impacted area experienced overall increases in total employment from 1970 to 1975 with increases of 5.6 percent in Big Horn County and 12.7 percent in Sheridan County. The actual rate of increase in Wyoming was considerable larger than in Montana and employment increased in each successive year in Wyoming. However, the employment movement in Big Horn County was not consistent in terms of rate or direction of change. Employment did increase from 1970 to 1971, 2.6 percent, but decreased 4.4 percent in 1972. The three succeeding years indicate positive changes in employment with 1.6 percent, 5.9 percent and .1 percent increases for 1973, 1974 and 1975, respectively.

The total labor force in Big Horn County, Montana has changed not considerable from 1950 to 1970 as demonstrated in a total labor force of 3.311 in 1950 compared to 3.317 in 1970. The employment level has also remained relatively constant during this time period but the unemployed segment of the labor force has demonstrated instability. In particular, the non-white segment of the labor force has experienced large absolute unemployment variations as well as large relative unemployment rate. From 1950 to 1960, the non-white unemployed increased from 109 to 247, an increase of 126.6 percent and the unemployment rate increased from 19.2 to 36.9 percent during this time period. In 1970 the number of non-whites employed has been decreased considerable, 247 to 70) and the unemployment rate has decreased to 19.7 percent. These date indicate non-whites experience a relative larger unemployment problem than whites in Big Horn County.

Total Employment

County	1970	1971	1972	1973	1974	1975	1970-1957 % Change
Big Horn	3820	3921	3750	3803	4031	4035	5.6
Sheridan	7845	7980	8073	8371	8643	8843	12.7
TOTAL	11,665	11,801	11,823	12.179	12,674	12,878	10.40

Source: BEA Data — United States Department of Commerce

TABLE 9 A
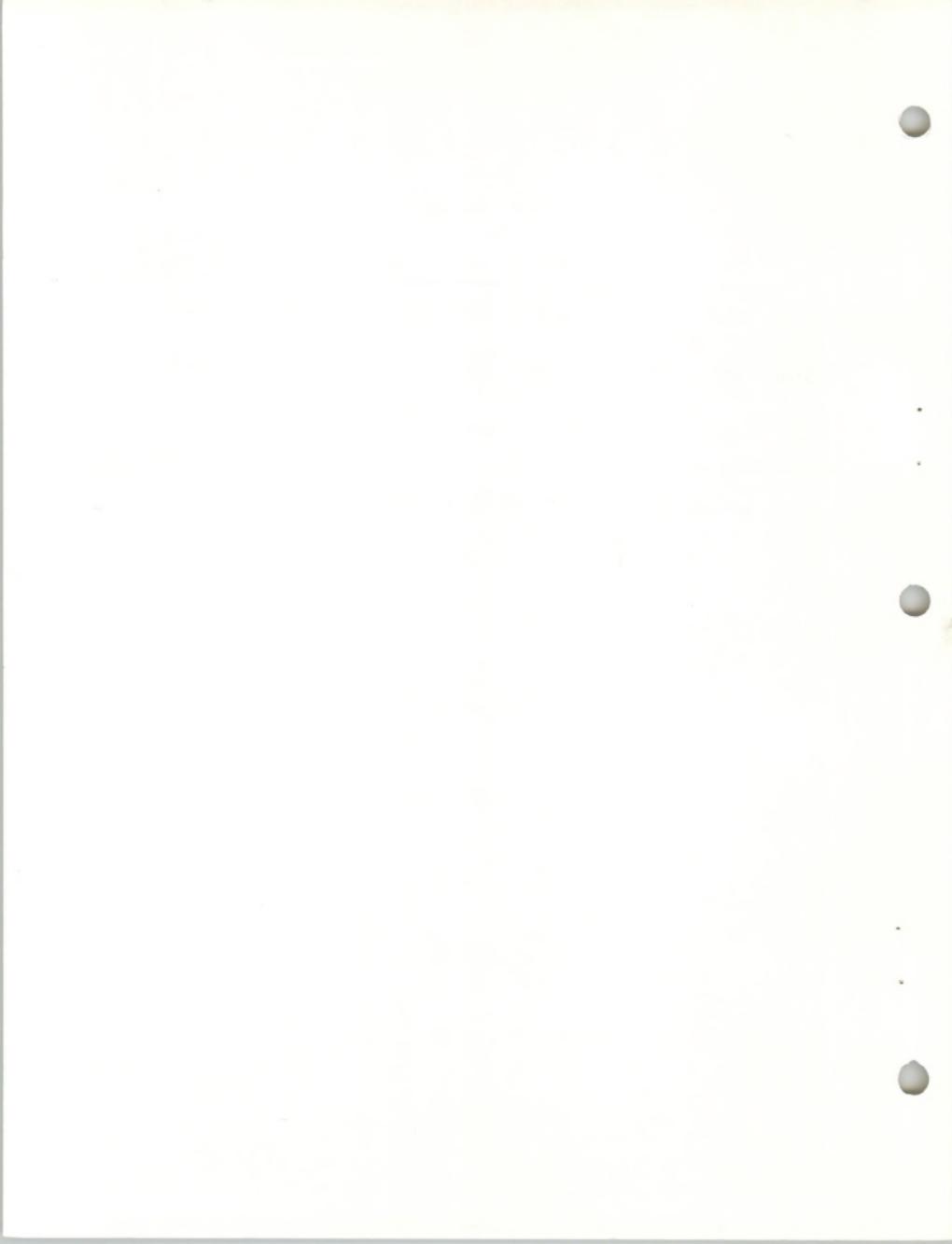
LABOR FORCE AND EMPLOYMENT
BIG HORN COUNTY 1950-1960

	1950		1960		1970	
	NON-WHITE	TOTAL	NON-WHITE	TOTAL	NON-WHITE	TOTAL
Labor Force	565	1,311	668	3,265	656	3,317
Employment Level	456	1,128	421	2,941	586	3,163
Total Unemployed	109	183	247	324	70	154
Unemployment Rate	19.3%	7%	36.9%	9.9%	13.7%	4.6%

1. Bureau of Census, 1970
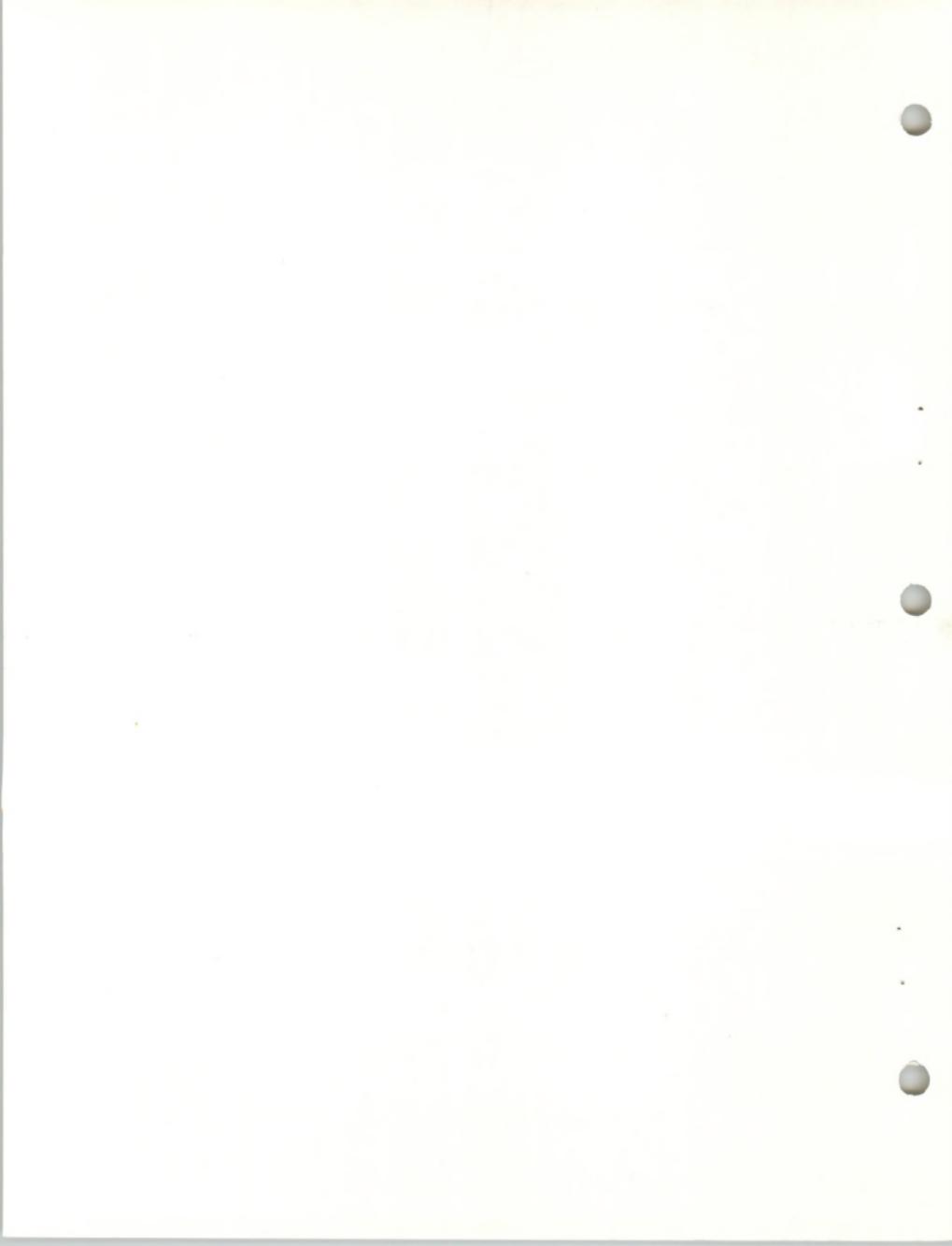
The total employment by sector in 1970 for the total impacted region suggests that agriculture, trade and services and government are basic employment components within the region (Table A-2 and A-3). However, the relative importance of these economic sectors differ between the two counties in the impacted region. For Sheridan County, the service sector of the employment economy provides employment than any other sector which largest employment in health services. Trade (specifically other retail trade) is the second most important source of employment with government, primarily education, being the third most source of employment. Agriculture, forestry and fishers provide employment for 11.98 percent of the employed in 1970 while mining, construction, manufacturing provide 2.73 percent, 6.45 percent and 4.50 percent of the employment respectively.

In Big Horn County, Montana, the most important source of employment is agriculture (28.3 percent) followed by government with 23.77 percent and trade with 17.2 percent of the 3163 total employment. Employment in construction and manufacture account for 5.12 percent and 10.2 percent respectively, while mining provided no employment opportunities in 1970 for this segment of the impacted area. There are rather larger and obvious deviations between the importance of economic sectors with the impacted area.

The data in Table A-3 provide for comparisons between the importance of economic sectors within each segment of the impacted region and the United States.

For each county in the impacted region agriculture, forestry and fishers is relatively more important than for the United States average in terms of employment. Additionally, service and trade are greater

	SHERIDAN COUNTY WYOMING	BIG HORN COUNTY MONTANA	[SHERIDAN COUNTY] [COMBINED]	REGIONAL TOTAL
Total employed 16 years and over	6,863	3,163		9327
Agriculture, Forestry and Fisheries		895		1692
Mining	182			182
Construction	438	162		
Manufacturing	358	317		617
Furniture, Lumber and Wood	35	8		91
Durable Products	47	33		115
Kindred Products	95	124		21
Publishing	112	22		17
Others	19	99		131
Transportation, Communication and Utilities	433	132		587
Transportation and Warehousing	210	55		297
Communication	97	30		101
Utilities	148	64		212
	1,572	544		2116
Trade				
Wholesale Trade	177	35		212
Grocery and Dairy Products	142	60		231
Eating and Drinking Places	256	145		
Other Retail Trade	995	504		1299
	214	53		367
Real Estate	93	40		133
Banking, Finance and Credit	121	13		135
Insurance, Real Estate				1938
	1,646	509		
Services				
Business and Repair Services	229	92		321
Personal Services	442	81		
Entertainment	30	13		43
Health Services	707	172		290
Professional Services	229	11		1419
	1,067	752		
Government and Miscellaneous	659	365		
Federal	138	97		
Public Administration	270	290		

SOURCE: U. S. Census of Population, 1970

SECTOR	SHERIDAN COUNTY WYOMING %	BIG HORN COUNTY MONTANA %			U. S. DISTRIBUTION %
Total Employed 16 years and over	100.00	100.00			
Agriculture, Forestry & Fisheries	11.99	23.36			4.55
Mining	2.75	0.00			0.60
Construction	6.36	5.19			4.51
Manufacturing	4.50	10.82			24.85
Lumber, Wood Products and Mach.	.53	0.18			
Metal and Metal Products	.71	2.09			
Food and Kindred Products	1.46	2.92			
Printing and Publishing	1.79	0.70			
Other Manufacturing	.18	3.13			
Transportation, Communication and Utilities	6.63	4.17			5.69
Transportation and Warehousing	3.15	1.22			3.45
Communications	1.46	0.96			1.50
Utilities	1.22	2.02			.64
Trade	23.59	17.20		20.15	20.07
Wholesale Trade	2.66	1.11			5.14
Food, Bakery and Dairy Products	2.13	1.90			
Eating and Drinking Places	3.87	4.59			3.52
All Other Retail Trade	14.93	9.61			11.91
Finance	3.22	1.57		2.66	
Banking, Finance and Credit	1.40	1.26			
Insurance, Real Estate	1.82	0.40			
Services	24.69	9.67		24.69	16.14
Business and Repair Services	3.41	1.01			
Personal Services	6.64	2.06			
Entertainment	.50	0.41			
Health Services	10.61	5.14			
Professional Services	3.44	0.94			
Public Administration, Miscellaneous	16.01	23.77	14.64		17.41
Miscellaneous	9.89	11.43			
Industry	2.07	3.07			
Public Administration	4.05	0.17			

NOTE: Some columns may not add to 100.00% due to rounding

SOURCE: U.S. Census of Population, 1970.

employment services in the impacted than in the United States in relative terms. However, manufacturing and finance provide larger employment opportunities in the United States than within the impacted region.

The employment distribution and importance of economic base for Sheridan, Wyoming in 1970 resembles the distribution and importance for Sheridan County (Table A-4). The trade economic sector is most important for Sheridan, followed by trade, services and government while agriculture, finance and mining account for approximately 11 percent of the employment in Sheridan.

These data concerning labor force and employment indicate that differences between Big Horn County and Sheridan County do exist in terms of size of labor force, employment rates, changes in employment over time, and relative importance of economic sectors. Additionally, the segments of the impacted region have different relative economic sectors than the United States.
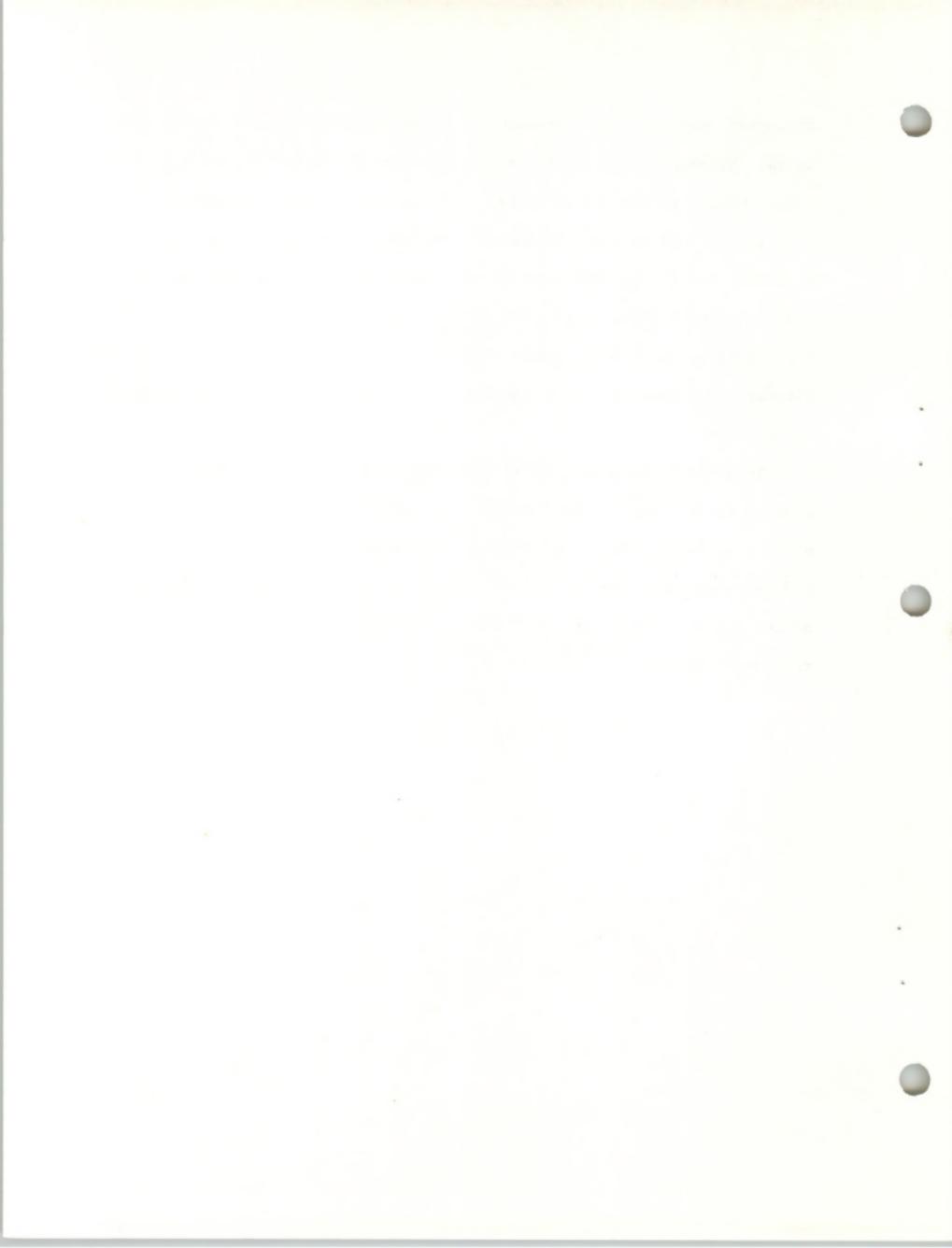
EMPLOYMENT DISTRIBUTION AND DERIVATION OF ECONOMIC BASE, SHERIDAN, WYOMING, 1970

	EMPLOYMENT	PERCENT DISTRIBUTION	LOCATION QUOTIENT	SERVICE EMPLOYMENT PTE	PERCENT DISTRIBUTION OF MIN. SERVICE EMPLOY.	BASE EMPLOYMENT PTE	BASE TO SERVICE RATIOS	%-TRENDS IN EMPLOYMENT 60-70?
Total Employed 16 Years and Over	4213	100.85		1337.5		2875.5		
Agriculture Forestry and Fisheries	110	2.61	0.57	8.4	0.30	101.6	12.1	
Mining	118	2.80	3.50	2.0	0.06	116.0	59.0	
Construction	255	6.05	1.31	37.9	0.90	217.1	5.7	
...	221	5.05	0.30	52.7	2.30	...3	1.3	
	22	0.52						
	25	0.59						
	67	1.59						
Printing and Publishing	92	2.10						
Other Manufacturing	9	0.22						
Transportation, Communication and Utilities	330	7.84	2.25	42.1	1.00	267.9	6.8	
Transportation and Warehousing	185	3.87	1.21					
Communication	53	2.03	1.47					
Utilities	84	2.17						
Trade	1163	27.60	1.10	453.6	10.50	729.0	1.7	
Wholesale	109	2.57	0.40					
...products	38	2.04						
	2.5	4.01	1.15					
	716	18.66	1.76					
	151	3.93	0.70	50.6	1.20	...4	1.0	
	67	1.59						
	84	1.99						
Services	1127	26.76	1.66	40.2	9.50	570.8	1.4	
Business and Repair Services	155	3.70						
Personal Services	320	7.60						
Entertainment	15	.56						
Health Services	475	11.70						
Professional Services	100	3.30						
Government and Miscellaneous	748	17.76	1.00	269.6	6.40	478.4	1.8	
Government	416	9.87						
...	126	2.99						
...	205	4.90						

...
Employment Security Commission

B. Incomes and Earnings

The per capita income from 1970 to 1975 in total increased in each segment of the impacted region (Table B-1). However, the income levels between Montana's Big Horn County and Wyoming's, Sheridan County are different. For each year during this six year period, the income in Wyoming exceeded the income in Montana. In 1975 for example, income in Sheridan County exceeded income in Big Horn County by $1722. An additional difference is the income increases during this time span. Sheridan County incomes increase approximately $2000 and increased each year. Big Horn income increased 1350 during the time but did decrease from 1970 to 1971. The actual percentage increase for each of these counties was less than the percentage increase in income within their respective state.

However, per capita incomes in Sheridan County exceed the per capita incomes for the State of Wyoming in each year considered. For example per capita income in 1975 for Sheridan County was 1.02 percent greater than per capita income for Wyoming. In the case of Big Horn County, per capita incomes are less than the State of Montana per capita incomes in each year considered. In 1975, Big Horn exhibited a per capita income of $4,482 which was 82 percent of the State of Montana incomes of 5,433.

In attempting to determine the importance of the various economic sectors based on earnings within the impacted region, the data in Table B-2 indicate this information. For the total impacted region. The four most important identifiable economic sectors are trade, federal governments, state and local government and services. On a comparative basis, the United States most important sectors are manufacturing, trade, services, and state and local government.
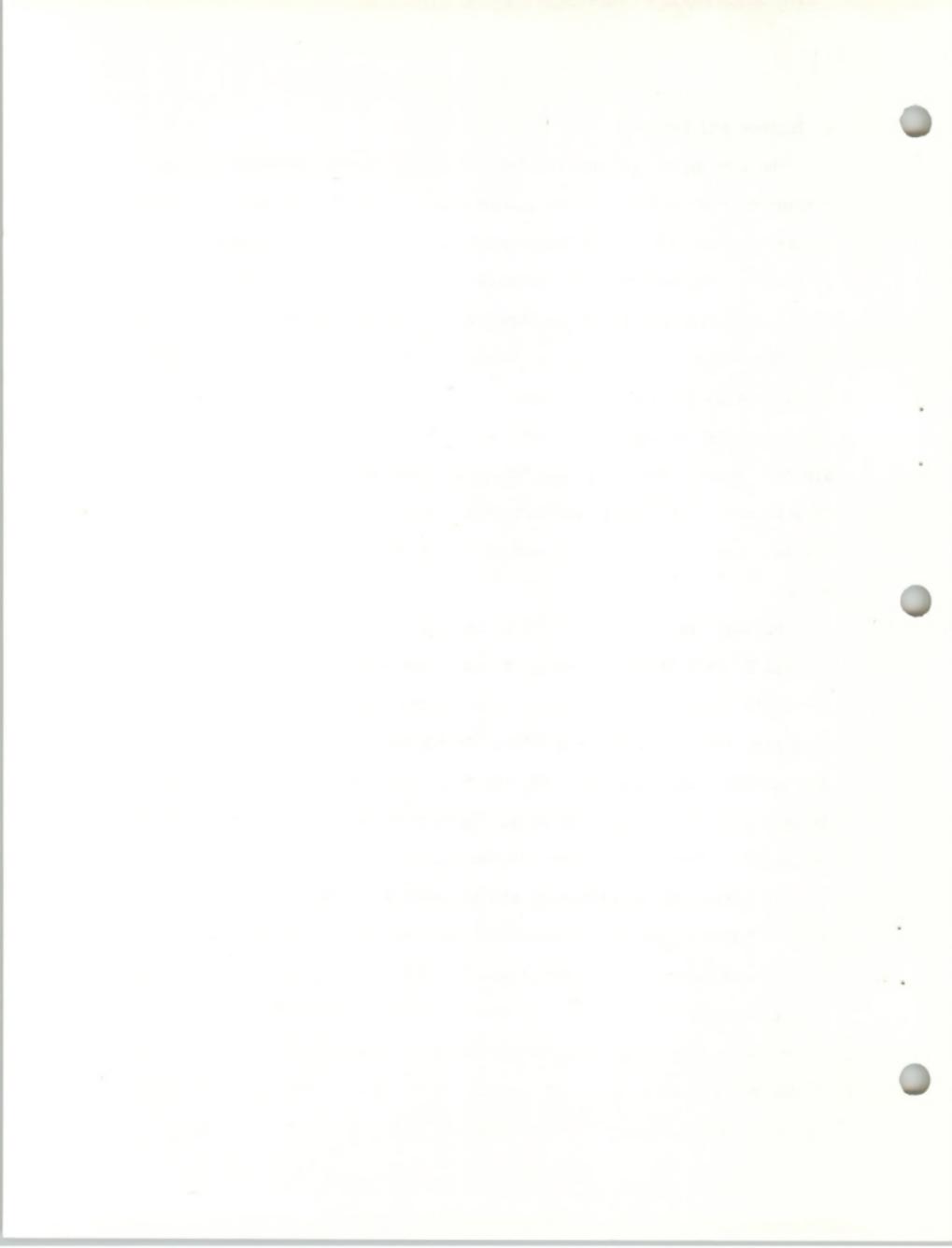
Table A.2

PER CAPITA INCOME 1970-1975

Sheridan County, Wyoming and Big Horn County, Montana

States of Montana and Wyoming and the United States

|	1970	1971	1972	1973	1974	1975	% Change 1970-75
Big Horn	$3,132	$2,948	$3,541	$4,302	$4,456	$4,482	43.1%
Sheridan	4,236	4,447	4,675	5,270	5,885	6,204	46.4%
Montana	$3,500	3,576	4,070	4,784	5,079	5,433	55.2%
Wyoming	3,815	3,868	4,278	4,948	5,644	6,079	59.3%

SOURCE: Bureau of Economic Analysis, U.S. Dept. of Commerce, R.E.I.S.

As indicated previously there are distinct differences between the economic system of the two counties in the impacted region. In terms of earning, Big Horn County's most important sector is farm wages. Farm income followed by mining and federal government. In Sheridan County, the most important earning sectors are trade, federal government, services and state and local government followed closely by non-farm income.
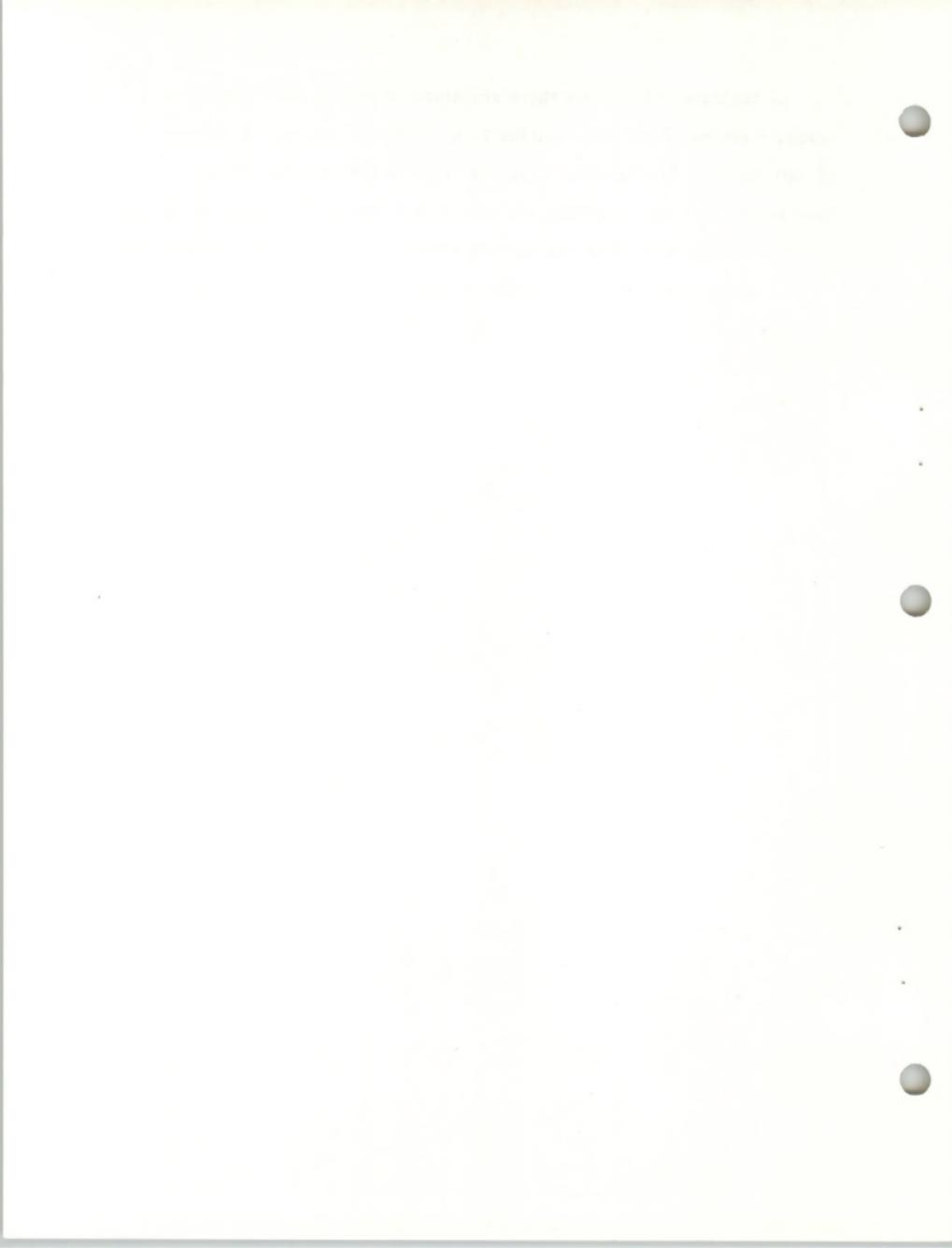
TABLE _12_

SECTOR EARNINGS - 1975

Big Horn County, Sheridan County

(Thousands of Dollars)

	Big Horn County	Sheridan County	Two County Total	Two County Percentage of Total	Montana % of Total	Wyoming % of Total	U.S. % of Total
Total Earnings	$51,268	$83,997	$135,265	100.0	100.00	100.0	100.0
Other Labor Income	1,689	3,141	4,830	3.5	3.5	4.3	
Proprietor's Income	11,015	10,264	21,279	15.7	18.8	9.9	
Farm Income	7,758	160	7,918	5.9	11.0	1.1	
Non-Farm	3,257	10,104	13,361	9.8	7.0	8.8	5.0
Industry Wage & Salaries	38,564	70,592	109,156	80.7	78.7	85.8	86.0
Farm	10,379	2,192	12,571	9.4	12.7	2.8	3.0
Government	9,646	19,146	28,792	21.2	17.0	17.7	16.0
Federal	5,657	9,198	14,855	10.9	6.5	7.1	
State and Local	3,989	9,948	13,837	10.2	10.5	10.6	
Private Non-Farm	18,539	49,254	67,793	50.1	49.0	65.3	
Manufacturing	(D)	3,345	—	—	7.5	5.5	22.0
Mining	6,316	(D)	—	—	2.9	14.8	1.2
Construction	2,155	9,619	11,774	8.7	5.0	11.0	4.8
Trade	4,216	13,654	17,870	13.2	13.5	12.4	14.4
F.I.R.E.	753	3,066	3,819	2.8	2.8	2.6	4.6
T.C.U.	1,262	4,909	6,171	4.6	6.9	9.0	6.0
Services	2,953	10,894	13,847	10.2	10.4	9.7	13.8
Other	(D)	(D)	(D)	(D)	0.0	.3	.2

Source: Bureau of Economic Analysis, U.S. Dept. of Commerce, R.E.I.S. Program

Specifically, attention is devoted to local labor force and employment, earnings and incomes and taxes.

C. Taxes

The defined impacted area is not subject to identical tax bases and tax regulations because each segment of the impacted area is influenced and regulated by statutes within each segment respective state. There are considerable variations among the tax revenue generating statutes between Montana and Wyoming. A precise and comprehensive delineation of Wyoming and Montana's state taxation and revenue system and local governments taxation and revenue system has been prepared by Layton S. Thompson.

Relative to Montana, Thompson's works indicate the following taxes prevail in Montana, 1) Property taxes, 2) personal income tax, 3) corporation income tax, 4) highway users tax, alcoholic beverage tax, 5) Montana Tobacco taxes, 6) mineral resource taxes, 7) insurance tax, 8) inheritance tax, and 9) unemployment compensation. Additionally, Montana incurs revenue from two additional revenue generating policies. There does exist a special revenue policy for educational financing in Montana focuses on the general school budget, the foundation program, permissive district levy and other budget items.

The State of Montana for purposes of financing highways, road and streets has fuel taxes, property tax levies, special improvement taxes, property ... es, special im... districts, veh... registration, gross veh... weight tax, ccl... ... tax and feder... funds. Additionally, Thompson in... ... the state and ... tax revenues for Montana in 1974 and 1976 fiscal years were $427.56 m... ... ... $536.399 m... ..., respectively.
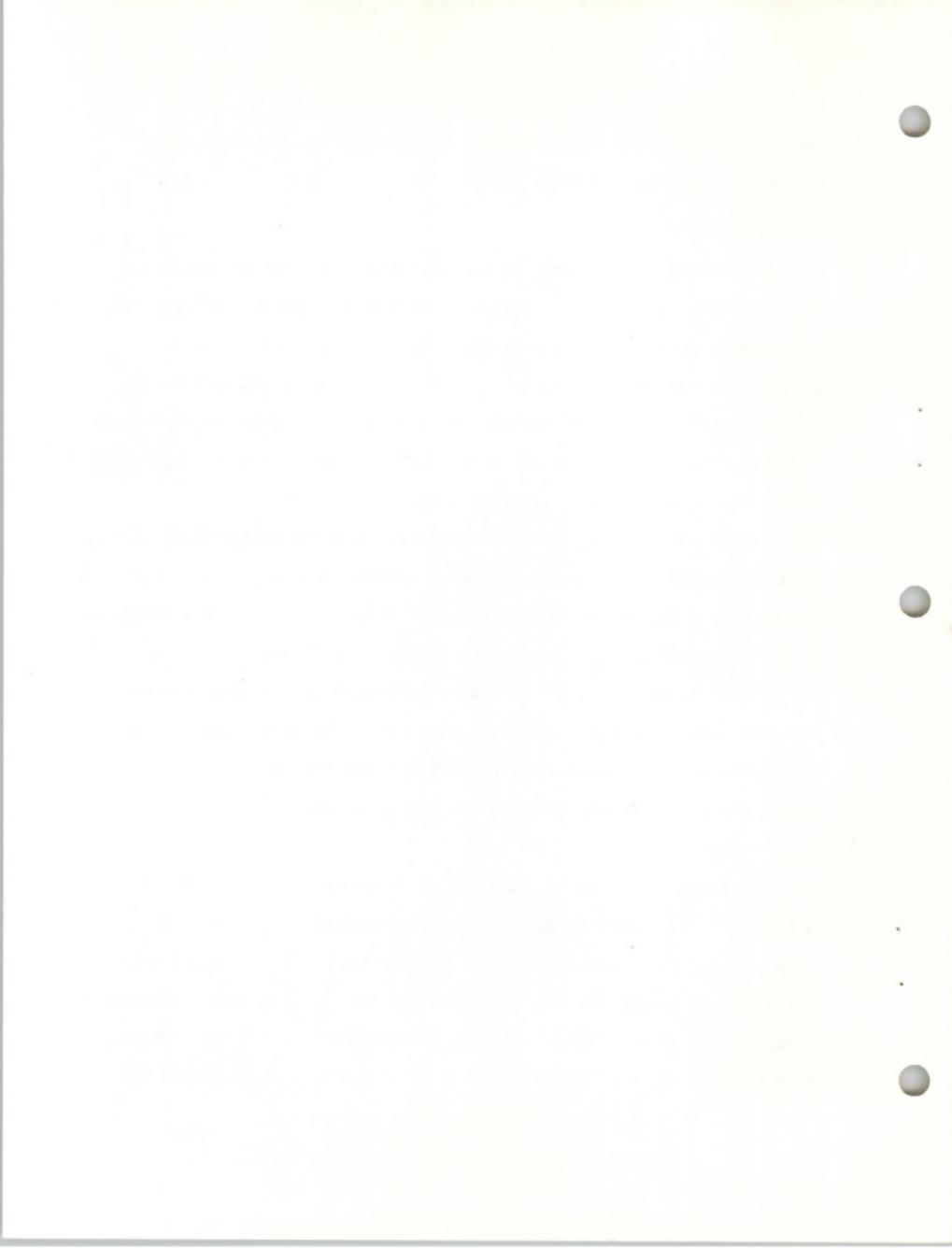
Of the 1974 total, 54.3 percent was related to the property tax, 18.4 percent to individual income tax, 8.3 percent to motor fuel taxes, 3.7 percent to corporate license and 2.7 percent to natural resource taxes. In comparison for 1976, 52.3 percent of the revenues was attributed to property tax, 18.2 percent to individual income tax, 7.7 percent to motor fuel tax, 4.3 percent to corporate license and 6.3 percent to natural resources tax.

Thompson's work relative to Wyoming indicate the following taxes, 1) Property Tax, 2) Sales and Use Tax, 3) Highway User Taxes and Fees, 4) Natural Resource Based Taxes, 5) Alcoholic Beverage Tax, 6) Cigarette Tax, 7) Miscellaneous Revenues sources of a) Insurance Company Tax, b) Inheritance and Estate Tax, c) Fish and Game License and other fees and Unemployment Compensation Tax. Additionally, Wyoming has special provisions relative to financing education which includes school levy, foundation program and supplemental aid program. Financing for highways and streets are yield by some of the previous mentioned taxes but are supplemented by special improvement levies. Thompson indicates the taxes from own sources, in Wyoming was $273,167 million in fiscal year 1974-75 compared to $333,750 million in 1975-76. Of the 1974-75 total 48 percent was accounted for by property tax, 22 percent from sales tax, 5 percent from user tax, 7 percent from gasoline tax and 7 percent from mineral severance tax. For the 1975-76 total, 47 percent was accounted for by property tax, 22 percent from sales tax, 5 percent from gasoline tax and 12 percent from mineral severance tax.

Each tax within the improvement have special provisions in terms of levies and mill rates as well as special provisions for intergovernmental flows to local units of government of the county, town and school district levels.

In comparing differences between the Montana and Wyoming revenue system, two differences are apparent. Wyoming has no personal income or corporate income tax structure while Montana has no sales tax structure. However, there are numerous tax revenue systems which are common in nature between Montana and Wyoming. For example, both states return a significant funds to local levels of government and the property tax is the major source of revenue. Additionally, the majority of property tax revenues generated in each state are returned to local units of government such as the county, town and school units.
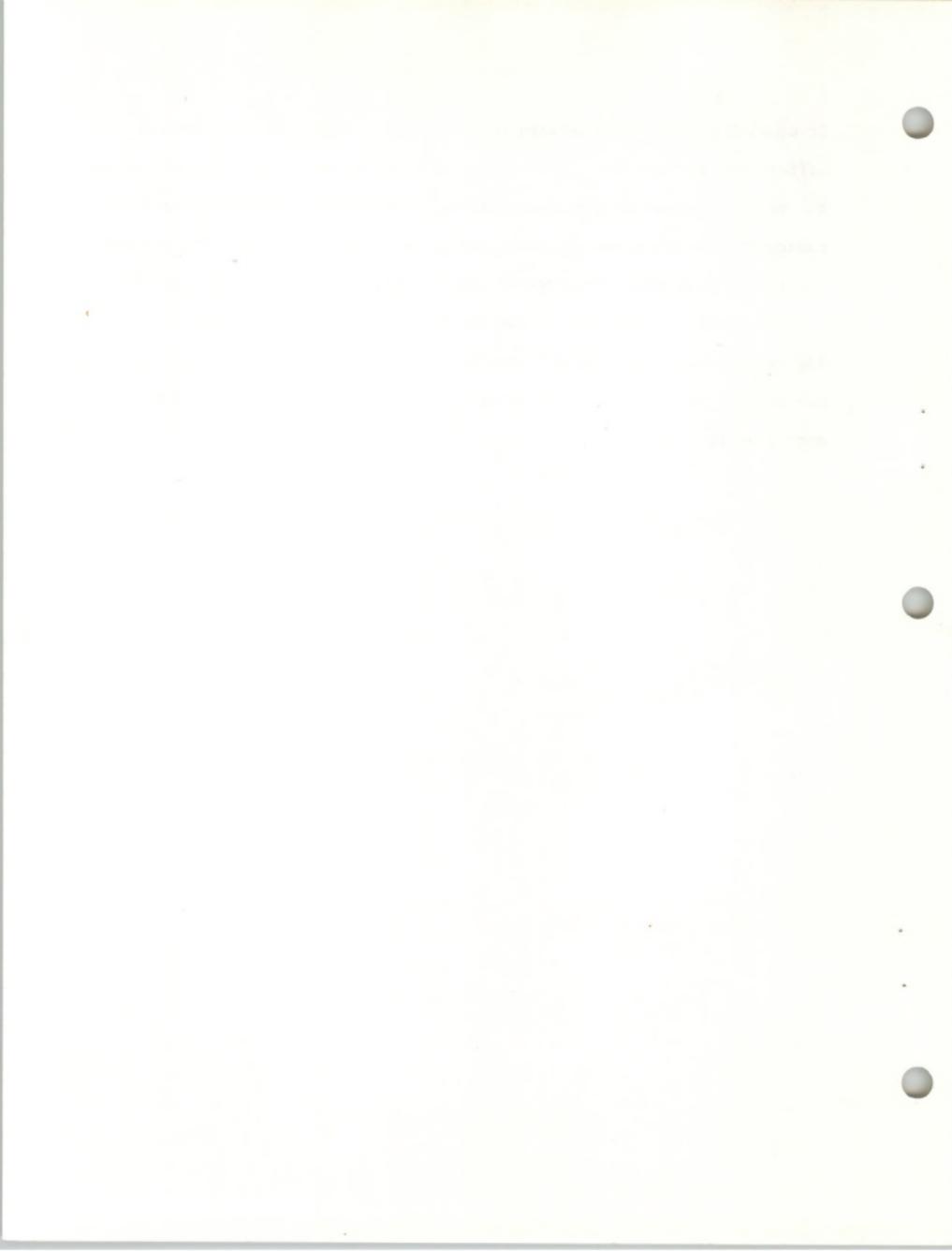
Taxes Continued

The actual tax system for Montana tax laws for state and county jurisdiction by type of tax and maximum mill limit are presented in Table C1. Additionally, the actual tax levies for Big Horn County, Montana are presented in Table C2 from 1969 to 1974. The data in Table C3 present a detailed account of tax revenues, rates and valuations of Big Horn County from 1960 to 1974. In general these data indicate increased assessed valuation, increase taxable evaluations, increased revenues for State, County, schools, cemetaries, and municipalities, decreased rates and decrease levies.

For the County of Sheridan, the total tax revenues in 1974 was $1,341,505 of which 41 percent was generated by the 12.00 mill school levy, 19 percent by 5.55 mill levy of general county and 14 percent by 4.11 mill levy from school foundation program. These revenues were generated from the $45.638 million of assessed valuation for Sheridan County in 1974. Historically, the assessed value for Sheridan County has been increasing (Table C5).

The City of Sheridan has also experienced increases in assessed valuation, decreased mill levies and increased taxes collected since 1970 (Table C6). The specific analysis of funds for 1974 in the City of Sheridan indicates the general funds at a 7.40 mill rate account for 57 percent of the total $228,973 revenue (Table C6A).

The budgeted expenditures for the City of Sheridan in 1975 indicate water and sewer are major components in expenditures but are also major components in revenues. In terms of changes in expenditures from 1966 to 1973, parks and recreation expenditures have increased significantly more than any other expenditure category while water and sewer expenditures have decreased (Table C7).

TABLE E-7
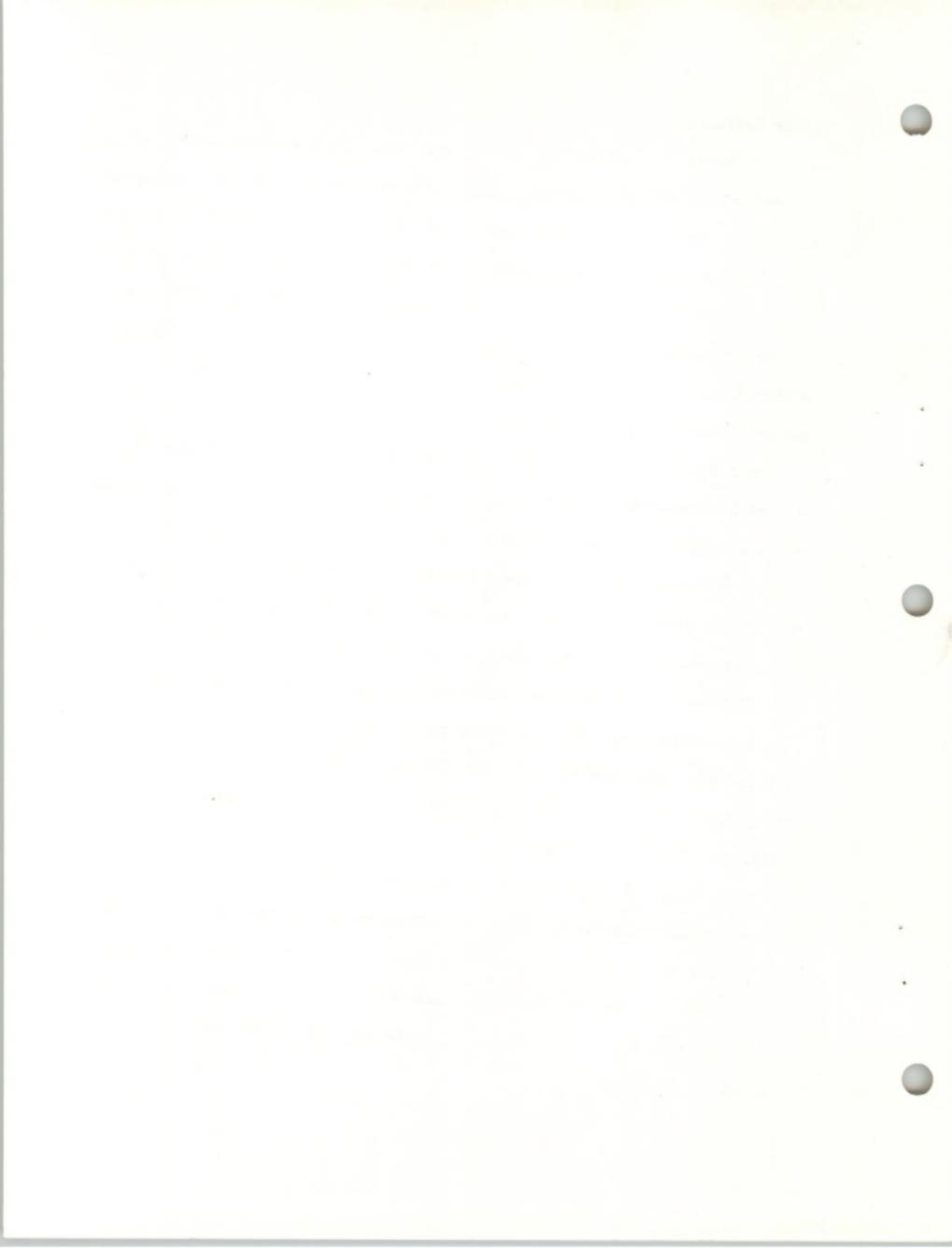
SUMMARY OF MONTANA TAX LAWS
FOR STATE AND COUNTY JURISDICTION

	MAXIMUM MILL LIMIT
STATE PROPERTY TAXES	
General Fund	2.00
University Fund	6.00
Statewide Deficiency Levy for Public Schools	As Needed
Statewide Public School Supplemental Permissive Levy	9.00
Special Livestock	9.00
Property Tax Administration (Repealed)	————
TOTAL	21.00
COUNTY PROPERTY TAXES	
General Fund	23.00-27.00
Poor Fund	13.5
Bond Sinking and Interest	As Necessary
Road	12.00
Emergency Levies	2.00
Employee Retirement	
Bridge Tax	3.00- 5.00
Special Bridge and Road Tax	10.00- 5.00
Airport Tax	2.00
Airport Authority	No Limit
Public Ferry Tax	2.0
County Fair Tax	1.5
Library Tax	3.0
Rodent Control Tax	2.0
Insect Pest Tax	1.0
Weed Control	2.0
Extension Work in Agriculture and Home Economics	No Limit
Fire Districts	As Necessary
Soil Conservation Districts	1.5
Conservancy Districts	2.0 - 5.0
Cemetery	2.0
Local Boards of Health County	2.0
Museum Fund Tax	0.5
Mosquito Control Districts	5.0
Planning and Zoning	2.00- 6.00
Hospital Districts	3.00
County Soil Commission	As Needed
... Tax	2.00
... Improvement Districts	
...	1.0
... Program ...	1.0

TABLE 1-4
TAX LEVIES, BIG HORN COUNTY
MONTANA
1970-1974

		1970		1971		1972		1973		1974	
		DETAIL	TOTAL	DETAIL	TOTAL	DETAIL	TOTAL	DETAIL	TOTAL	DETAIL	TOTAL
STATE			2.20		2.20		6.10		5.00		5.00
General Fund		2.20		2.20		-0-		-0-		-0-	
Ed Bond	6.00	2.20		2.20		6.10		6.00		41.00	6.00
LIVESTOCK LEVIES											
Sheep	12.00		12.00		12.00		11.00		11.50		11.50	
All Other Livestock	10.50		10.50		10.00		10.00		10.50		10.50	
COUNTY LEVIES			31.26		24.67		24.04		33.75			
General Fund			14.50		17.25		19.47		13.25		17.00	18.80
Debt Service			-0-		6.00		.65		0.47			
All Other Taxes			10.11		10.25		13.56		12....			
SPECIAL COUNTY LEVIES			55.36		56.82		58.40		60.84		60.53	57.80
Poor Fund			0.55		5.15		3.26		1.25		1.61	
			6.26		10.11		10.53		10.36		7.94	
			49.44		46.25		40.67		53.64		47.91	
			0.39		0.39		0.39		0.77		0.36	
SCHOOL DISTRICT LEVIES											
Districts 91	9.93		4.23		11.57		4.45		9.06		2.63	
2	16.82		13.55		16.59		23.75		19.32		15.63	
14	29.85		23.95		33.37		27.15		26.76		26.27	
17	27.33		31.49		39.20		19.26		35.81		36.30	
17A	16.77		13.82		23.90		26.72		13.31		32.52	
27	16.74		17.24		27.34		34.84		29.34		20.97	
20	25.66		37.15		32.91		42.60		31.93		24.67	
CITY LEVIES			46.81		51.29		49.66		51.12		37.25	62.50
General Fund			9.68		7.60		8.03		49.00		55.50	
			1.87		2.60		2.27		2.25		2.00	
			34.56		38.66		40.02		7.60		5.00	
			1.00		1.00		0.50		-0-		-0-	
TOWN LEVIES			60.00		60.00		60.00		60.00		60.00	65.00
General Fund	30.00		24.00		24.00		24.00		24.00		65.00	
Debt Service	-0-		-0-		-0-		-0-		-0-		-0-	
All Other	30.00		36.00		36.00		36.00		36.00		-0-	
CEMETERIES											
District 1 (17A and 14)	0.54		1.62		0.60		.811		1.15		1.11	
District 2 (27 and 20)	1.07		.52		0.50		0.94		0.81		1.03	

SOURCE: Records of the County Tax Assessor, Big Horn County, 1975.

	1969		1970		1971		1972		1973		1974	
	RATES	REVENUES	RATES	REVENUES	RATES	REVENUES	RATES	REVENUES	RATES	REVENUES	RATES	REVENUES
DISTRICT ...												
...	4.73	2,411	8.30	2,649	6.10	2,091	6.00	2,107	21.00	7,891	6.00	2,682
...	76.00	22,563	94.56	29,000	93.44	32,025	94.60	33,515	57.45	55,296	74.60	30,346
...											32.47	1,038
TOTAL	72.04	23,617	102.41	33,064	125.44	42,593	127.32	44,753	132.12		113.12	51,667
Assessed Valuation			1,256,953		1,503,364		1,309,507		1,177,...			
Taxable Valuation			963,165		952,731		351,107		335,811			
DISTRICT 23												
...		14,633	6.00	15,246	6.10	11,540	6.00	11,618	21.00	42,353	6.50	13,895
...		145,913	81.06	169,649	93.44	127,516	94.60	182,341	67.45	208,257	76.60	172,649
...		39,947	17.26	31,654	27.36	51,581	32.64	63,205	29.25	59,058	20.92	48,135
TOTAL		27,823	3.22	1,192	0.90	210	0.94	1,819	0.91	1,632	7,320
Assessed Valuation	2,759,552	185,503	6,552,521	197,742	6,724,884	542,805	6,468,647	159,861	168,98	108,752	104.45	240,320
Taxable Valuation	1,787,895		1,849,601		1,809,879		1,820,971		2,273,...		3,631,...	
Dodge Grass...	60.0	12,395	60.0	13,194	60.0	13,265	60.0	13,158	2,745,735		2,500,917	
Assessed Valuation	766,192		863,341		833,129		828,025		925,753			14,510
Taxable Valuation	459,914		219,704		221,417		219,862		234,513			
DISTRICT 29												
State		8,505	6.00	9,415	6.10	6,495	6.00	4,589	21.00	24,399	6.00	7,662
County		79,467	81.49	62,416	93.44	99,489	94.60	103,864	67.83	113,736	76.60	97,871
Schools		27,523	27.55	58,062	32.63	34,061	42.46	46,780	33.51	59,629	26.67	24,058
...		308.96	3.12	635	0.90	936	0.94	1,094	0.94	641	1,062	213
TOTAL		12,503	177.96	129,779	133.17	142,003	144.16	158,307	153.61	178,404	110.10	140,856
Assessed Valuation	1,231,802		3,296,158		3,497,319		3,411,017		3,720,377		4,140,091	
Taxable Valuation	1,037,163		1,013,817		1,066,733		1,095,138		1,161,852		1,277,033	
TOTAL COUNTY												
State		110,031		111,994		86,379		86,679		322,315		173,426
County		1,037,514		1,069,558		1,337,426		1,369,796		1,502,...		2,272,289
Schools		287,836		359,011		647,899		576,804		471,...		966,310
Cemeteries		7,733		16,248		10,947		2,917		11,...		17,751
Municipalities		113,004		133,692		135,122		150,232		183,...		239,332
TOTAL taxes		1,541,202	1,710,493		156.00	2,187,680	150.32	2,170,624		2,476,106		3,233,688
Assessed Valuation			58,219,519		50,279,597		51,697,891		57,055,846		77,405,847	
Taxable Valuation			13,453,177		13,996,416		14,679,072		15,348,384		29,412,811	

Community Services

1. Water supply system
2. Wastewater treatment system
3. Solid waste disposal
4. Street maintenance
5. Primary and secondary education
6. Community college education
7. County library
8. Medical health care
9. Mental health care
10. Governmental office
11. Police protection
12. Fire protection
13. Recreation facilities
14. Community services

5.3 FINANCIAL RESOURCES

The Wyoming Taxpayers Association reports that
Sheridan County had a total assessed valuation of $45,639,207
in 1974. Revenues collected are shown in Table 10.

TABLE 10

TAX REVENUES, SHERIDAN COUNTY, 1974

TAX PURPOSE	MILL RATE	AMOUNT
General County	5.550	$ 253,352
General School	1.750	80,168
Library	1.590	72,566
Hospital	1.150	52,640
Fair	0.400	18,255
Central Welfare Health	1.500	68,458
Airport, Pest and Weed**	1.320	60,242
School Levy	12.000	547,658
School Foundation Program Fund*	3.---	167,575
TOTAL	28,551	$1,341,291

* Funds and taxes are collected by the State and distributed
to the counties on the basis of classroom unit valuation.

** Includes only Airport Fund and Weed Fund.

SOURCE: Reports of the County Tax Assessor, County of Sheridan,
Wyoming
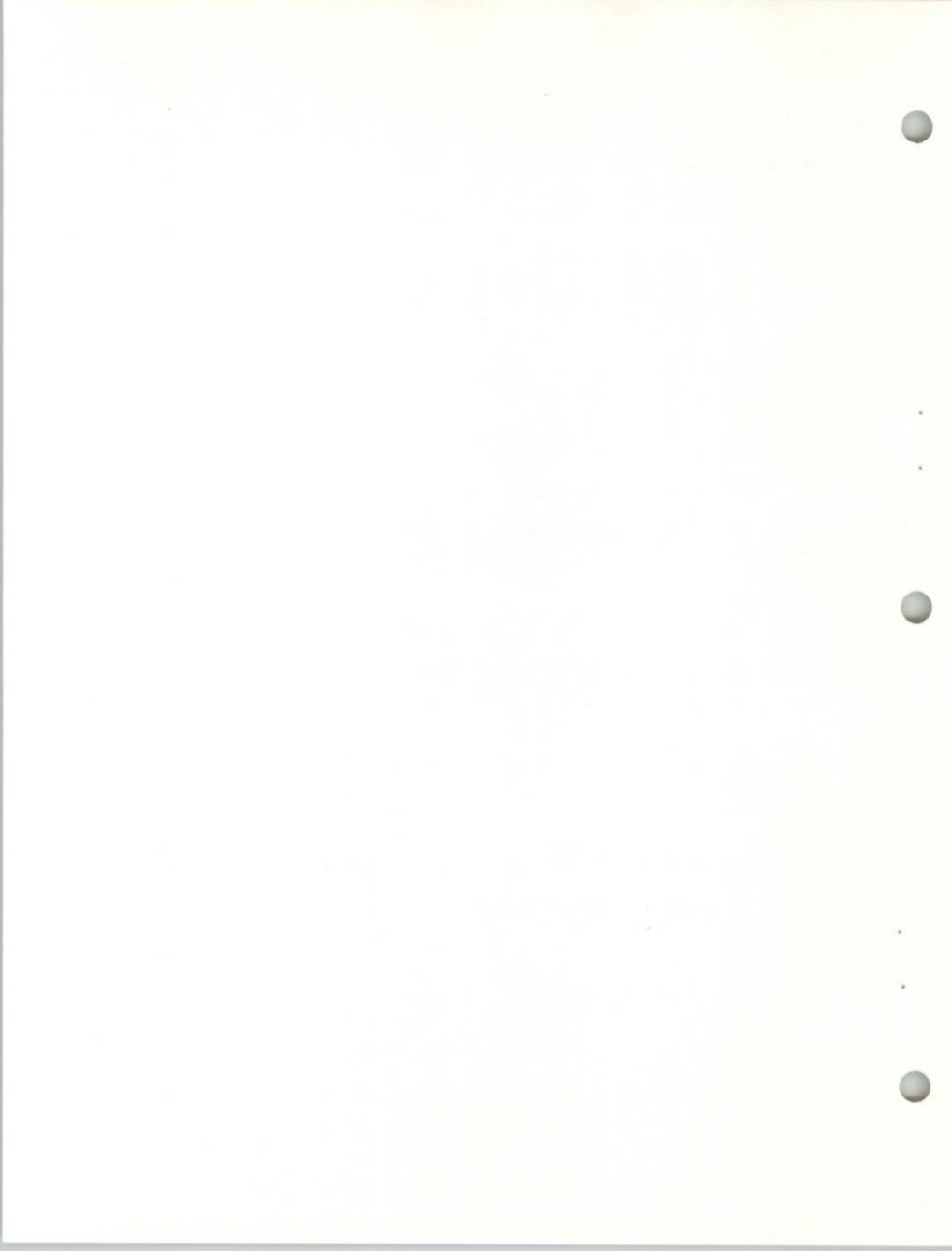
The historic trend in assessed valuation is as follows:

YEAR	ASSESSED VALUATION
1955	$37,655,915
1970	38,505,743
1971	42,453,555
1972	44,434,255
1973	44,735,659
1974	45,635,217

The City of Sheridan had a total assessed valuation of $17,668,165 and collected for the following:

FUND	MILL RATE	AMOUNT
General Funds	7.45	$130,744
Policemen's Pension Fund	.55	50,000
Bond Sinking Fund	5.11	25,579
Bond Interest Fund	1.22	21,555
TOTAL	12.55	$223,973

Historical aggregates are as follows:

YEAR	ASSESSED VALUATION	MILL LEVY	TAXES COLLECTED
1973	$17,668,165	12.95	$223,973
1972	16,978,065	12.84	217,935
1972	16,435,375	15.77	225,657
1971	15,678,912	14.05	225,751
1970	15,807,433	14.45	227,945
1967	15,744,732	14.55	225,559
1955	15,329,070	11.77	179,572

The total tax burden to property within the corporate limits of Sheridan is as follows:

	MILLS
City Taxes	12.55
School	
County	
Special	

Funding State Pension Fund

Table C-7
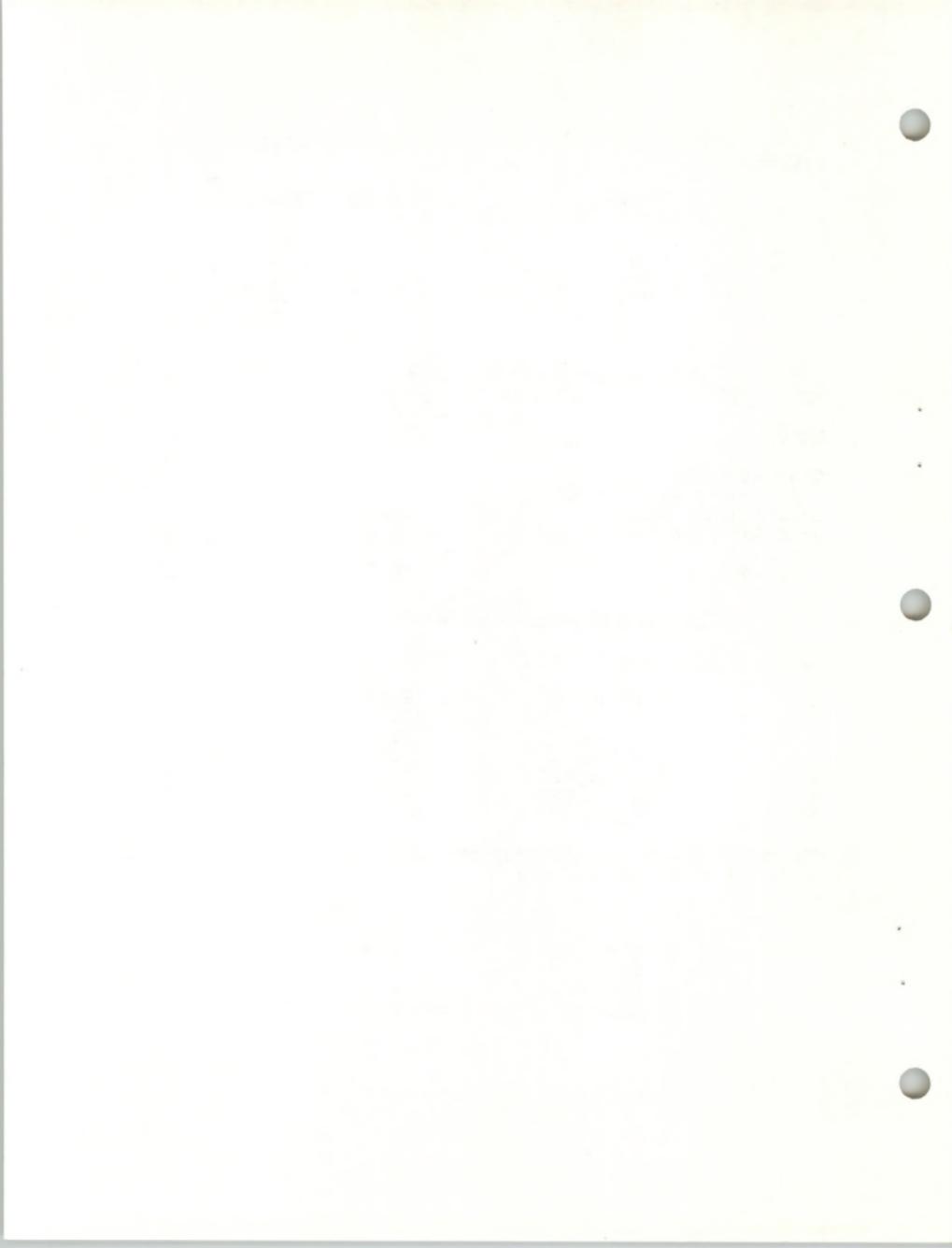
Budgeted Expenditures and Estimated Revenues
City of Sheridan, Wyoming
Fiscal Years 1966 and 1975
(Current Dollars)

	Fiscal Year 1966 (000's)	Fiscal Year 1975 (000's)	Percent Change 1966-1975
Budgeted Expenditures			
General fund, total	$ 710	$1,742	145.4
General government[a]	68	162	138.2
Police department	101	230	127.7
Fire department	87	170	95.4
Streets and alleys	301	205	-31.9
Public health and sanitation	66	158	139.4
Parks and recreation	21	219	942.9
Federal revenue sharing	--	302	--
All other	66	295	343.5
Bond sinking and interest funds	57	167	193.0
Cash and reserve funds	0	24	--
Subtotal	$ 767	$1,933	152.0
Water and sewer	2,233	653	-70.8
Total, budgeted expenditures	$3,000	$2,586	-13.8
Estimated revenues			
Transfers from state[b]	$ 119	$ 466	290.8
Other nontax revenue[c]	247	773	212.9
Property taxes[c]	167	218	30.5
Cash available	234	477	103.8
Subtotal	$ 767	$1,933	152.0
Water and sewer revenue	2,233	653	-70.8
Total, estimated revenue[d]	$3,000	$2,586	-13.8

Source: Budgets for the City of Sheridan.

[a] Includes general government, city attorney, city clerk and treasurer, secretary, municipal court, engineering department.

[b] From gas, miles, cigarette, and use (beginning in 1974) taxes.

[c] Slight Federal revenue sharing during 1975.

[d] ...... Sheridan Penning....

TABLE 12.

EXISTING BONDED INDEBTEDNESS AND AVAILABLE BONDING CAPACITY, SHERIDAN COUNTY SCHOOLS

SCHOOL DISTRICT	INDEBTEDNESS JULY 1, 1975	ASSESSED VALUATION 1974	REMAINING DEBT CAPACITY*	ESTIMATED ASSESSED VALUATION, 1975	REMAINING DEBT CAPACITY**
1	$ 47,000.00	$ 9,166,178.00	$ 869,617.80	$ 8,713,505.00	$ 824,350.50
2	2,752,000.00	31,878,246.00	435,824.60	34,970,155.00	657,715.60
3	70,000.00	4,593,783.00	389,378.00	4,198,705.00	349,870.50
TOTAL	$2,869,000.00	$45,638,207.00	$1,694,820.40	$47,900,305.00	$1,831,936.60

* Based on 1974 assessed valuation and indebtedness as of July 1, 1975.
** Based on estimated 1975 valuation and indebtedness as of July 1, 1975.

SOURCE: Records of County Tax Assessor, County of Sheridan, 1975

A partial financial perspective of the Sheridan County Schools by district indicates a total estimated assessed valuation of 1975 at $47.900 million which is approximately $2.262 greater than in 1974 (Table C8). In terms of debt capacity, the school system had a larger remaining debt capacity in 1975 than in 1974 an increased remaining debt capacity for district two below lower remaining debt capacity for districts one and three.

....pson, Layton S.. . .: Taxation and Revenue System of State and Local
..: rnments in Mont . .. as of 1976. Page 77-12 and the Taxation and Revenue
. stems of State and . . al Governments in Montana as of 1977, Staff Paper
77-20 and The Taxation and Revenue System of State and Local Governments
. Wyoming, Staff P. .. 77-13, Agricultural Economics and Economics Department,
College of Agriculture and College of Letters and Science, Montana State
University, Bozeman, M..
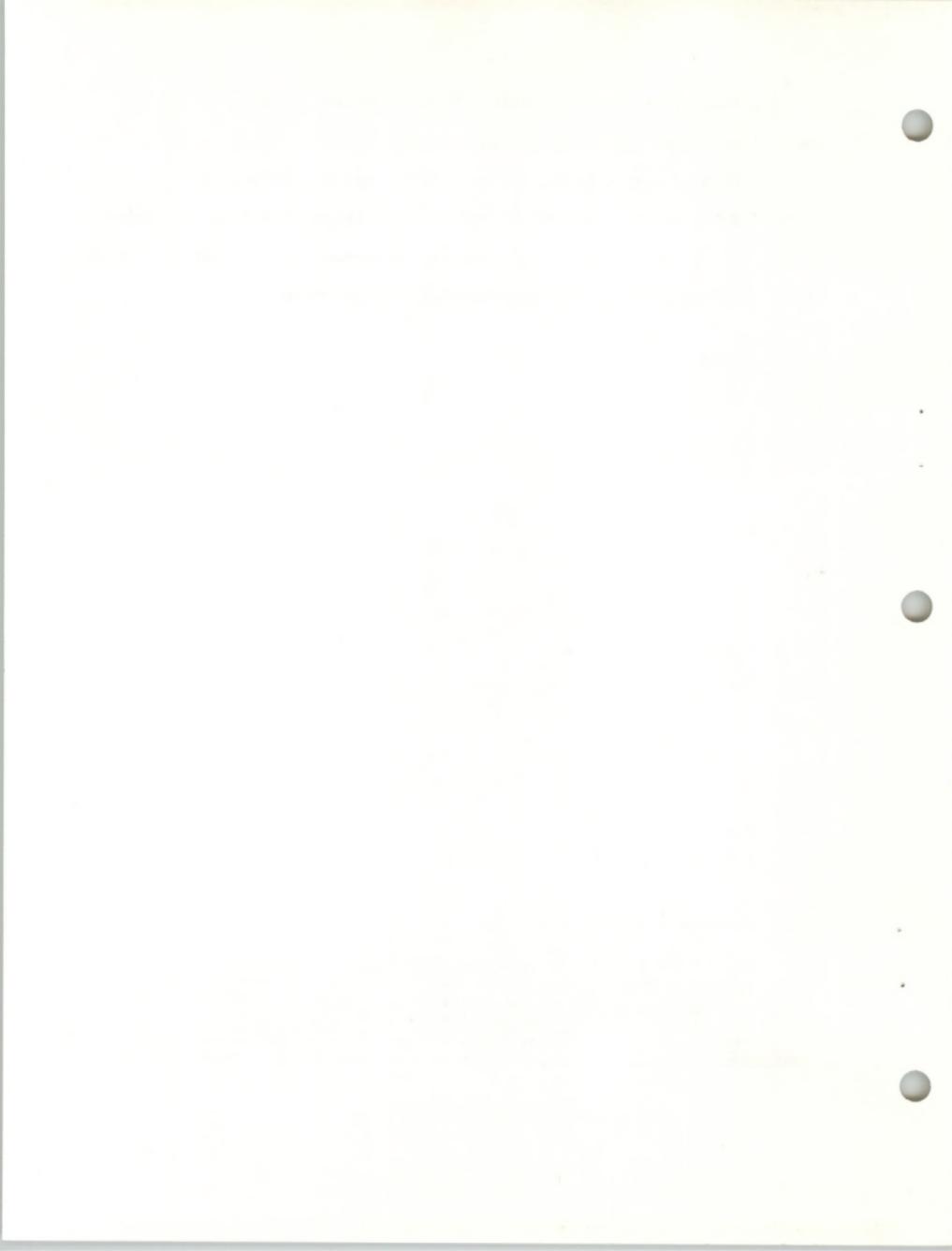
Economic Impact of Shell Pearl Mine

A. Delineation of the Model and Scenarios

   The Coal Town II Model 1 generates projections of economic activities
and impacts which are related but not necessarily causal in nature to coal
mining activities in Big Horn County, Montana and Sheridan County, Wyoming.
Specifically, the Model projects employment (number of miners, economic base,
ancillary and total employment), population (county and town), tons of coal
mined, consumer price index and employment-population ratio and migration.
Additionally, the Model projects revenues for state, counties, school
districts and town governmental units based on current statutes and regulations
which are applicable within the specific governmental unit. Furthermore,
projections are generated for expenditures, surpluses and/or deficits for
each governmental unit. However, the Model does not consider the impact
of the federal government relative to revenues generated through fiscal policies
and federal expenditures in the impacted areas through grants, loans, etc.

   The Model estimates the economic impacts for the identified local
impact area of the Decker area of Montana, Big Horn County and Sheridan
County, Wyoming. Economic impact estimates are generated for three sets
of projected development alternatives. These alternatives are: (1) without
Shell Pearl mine with all miners residing in Sheridan County, Wyoming; (2)
with Shell Pearl Mine with all miners residing in Sheridan County, Wyoming and
(3) with Shell Pearl Mine with 50 percent of the miners residing in Big
Horn County, Montana and 50 percent of the miners residing in Sheridan
County, Wyoming. Within each set of alternatives, six subsets of economic
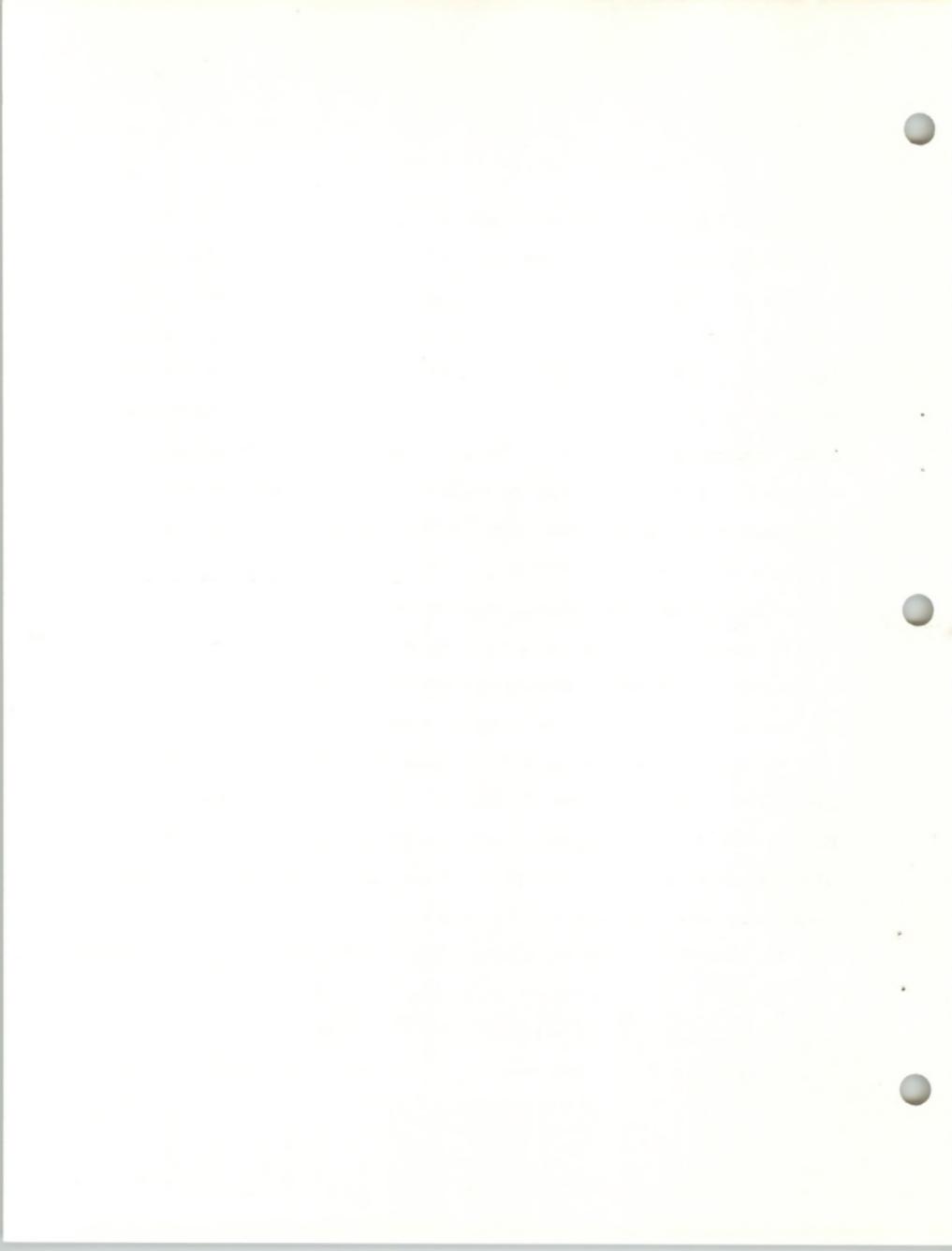
impact estimates are generated. These estimates are generated for Montana and Wyoming based on low, probable and high development potentials.

The low development scenario is based on minimal development in the impacted area. It consists of activities which currently exist in the form of mining and development activities which have been approved and committed. Specifically, it includes Big Horn, West Decker, East Decker, North Decker and the Public Service of Oklahoma mines.

The probable development scenario is based on the low development scenario plus the impacts of the proposed NERCO Spring Creek and Consolidated CX Ranch mines. This scenario generates estimates which are most probable for the current situation and proposals.

The high development scenario generates economic impact estimates based on the activities of the low and probable scenario plus potential developments which currently are not as progressed as the low and probable development activities. The specific additions to the scenario are Shell Oil Youngs Creek Mine in Montana, the Whitney and Welch Mines in Wyoming and Pacific Power and Light's projected electric generating plant in Sheridan County, Wyoming.

The Model generates annual estimates for the above mentioned categories (employment, population, revenue etc.) from 1975 to 1990 for each of the different potential development scenarios. As such, each scenario's economic impact is delineated which provides for evaluations among proposed developer or alternatives.

The basic data for the Model is inclusive of all activities through the beginning of 1974. The detailed current population, revenues and expenditures from each state, county, town and school districts, employment, coal production, and related data for the impact areas required for the Model
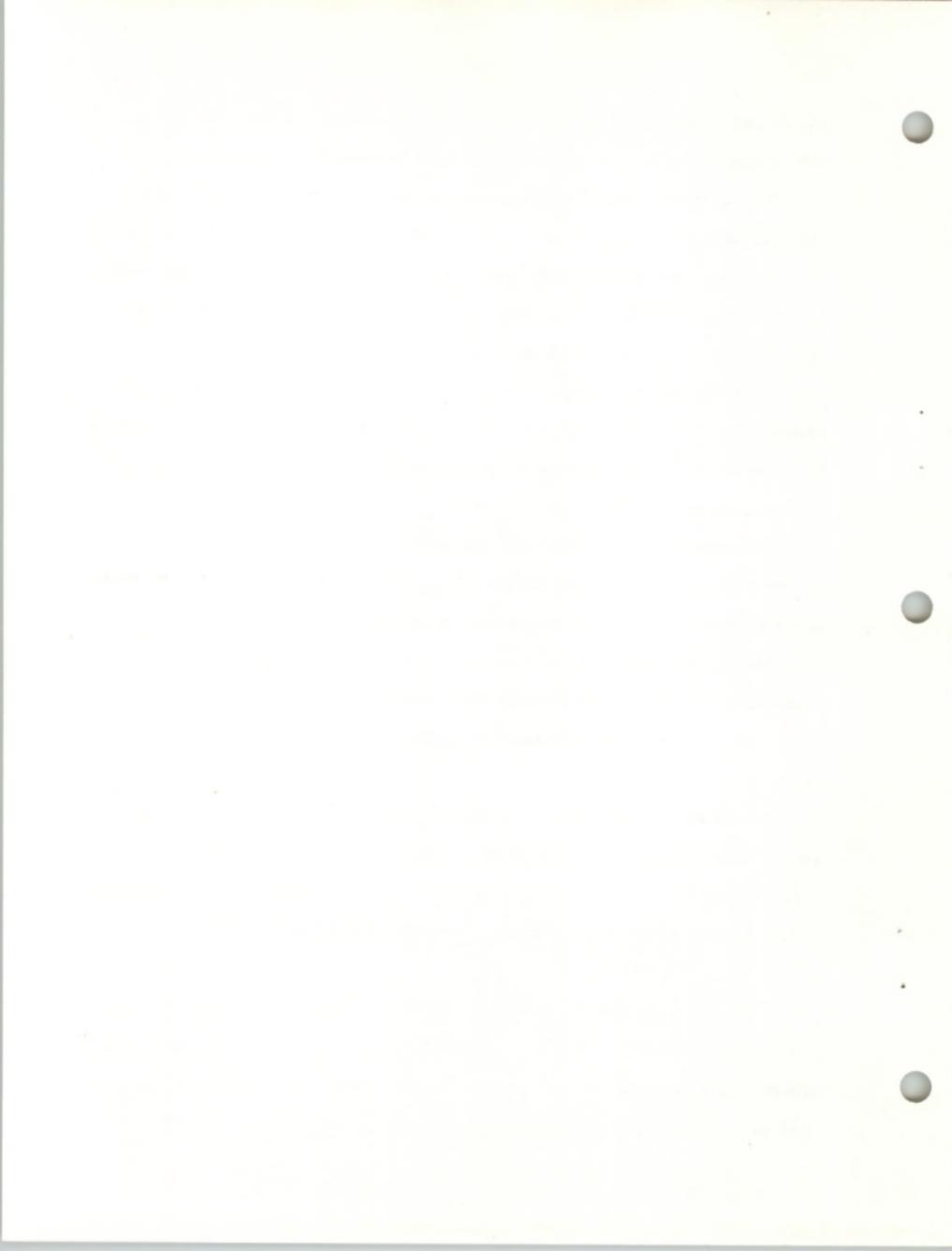
B. Coal Production

The projected coal production estimates for the identified impact area demonstrate significant variations among the development alternatives (Table 1). The total coal production within the impacted area ranges from a low of 9.7 million ton in 1975 to a potential high of 58.1 million ton in 1990. The coal production for the low scenario ranges from a low of 9.7 million tons in 1975 to a high of 29.1 million tons in 1990. The coal production ranges from a low of 9.7 million in 1975 to 44.1 million ton and 58.1 million ton in 1990 for the probable and high scenarios, respectively.

The coal production in Sheridan County, Wyoming is not affected by the Shell Pearl Mine but does reflect increased mining activities in Wyoming. The low and high scenarios coal production are constant regardless of Pearl Mine activity. However, the coal production for Wyoming increases for the high scenario, from .6 million ton in 1975 to 7.6 million ton in 1990, due to incremental mining activities associated with Whitney and Welch Mines and Pacific Power and Light generating complexes.

Coal production in Big Horn County, Montana increases from 9.1 million tons in 1970 to 50.5 million tons in 1990 when contrasting the low and high scenarios. Based on the low scenario, coal production would increase from 9.1 million tons in 1975 to 17.4 million in 1980 and 23.5 million tons in 1985 and remain constant to 1990. With the Pearl Mine, coal production would be 9.1 to 17.4 million tons from 1975 to 1980 and 25.5 million for 1985 and 90. Thus, the increase in production attributable to the Pearl Mine is 2.0 million ton from 80 to 1985.
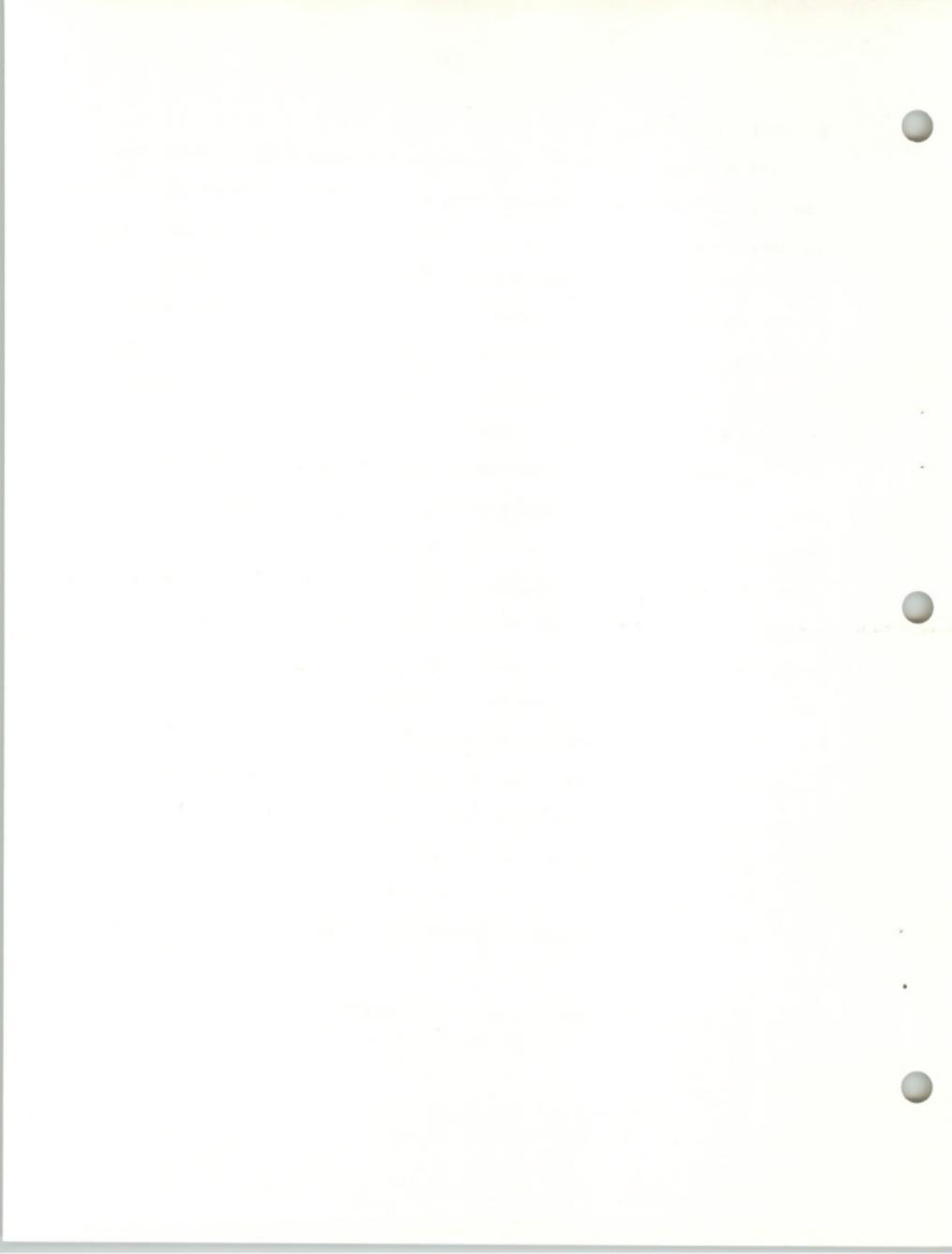
Table 1

Coal Production for 1975, 1980, 1985 and 1990
for Montana, Wyoming and Total Impacted Area
Considering the Low, Probable and High Scenarios

	Without Pearl Mine Wyoming Miners Only			With Pearl Mine Wyoming Miners Only			With Pearl Mine 50-50 Montana-Wyoming Miners		
	1975/1990	1985	1990	1975/1990	1985	1990	1975/1990	1985	1990
Montana									
Low	9.1	17.4	23.5	23.5	9.1 17.4	25.5	25.5	9.1 17.4	25.5 25.5
Probable	9.1	20.4	38.5	38.5	9.1 20.4	40.5	40.5	9.1 20.4	40.5 40.5
High	9.1	20.4	48.5	48.5	1.1 20.4	50.5	50.5	9.1 20.4	50.5 50.5
Wyoming									
Low	.6	2.3	2.3	3.6	.6 2.3	2.3	3.6	.6 2.3	2.3 3.6
Probable	.6	2.3	2.3	3.6	.6 2.3	2.3	3.6	.6 2.3	2.3 3.6
High	.6	5.3	6.3	7.6	.6 5.3	6.3	7.6	.6 5.3	6.3 7.6
TOTAL									
Low	9.7	19.7	25.8	27.1	9.7 19.7	27.8	29.1	9.7 19.7	27.8 29.1
Probable	9.7	22.7	40.8	42.1	9.7 22.7	42.8	44.1	9.7 22.7	42.8 44.1
High	9.7	25.7	54.8	56.1	9.7 25.7	56.8	58.1	9.7 25.7	56.8 58.1
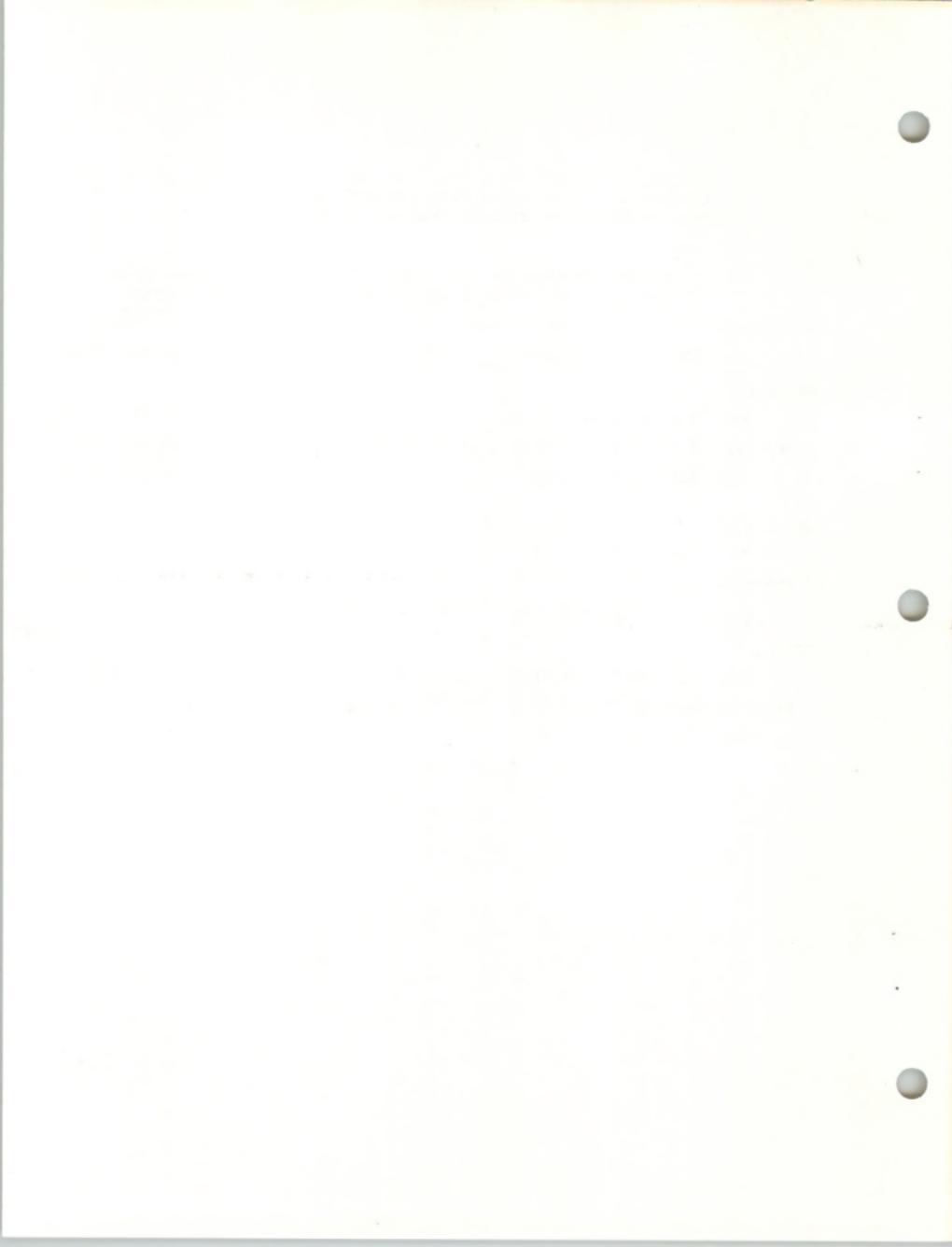
The probable scenario data demonstrate coal production increases from 9.1 million tons to 38.5 million tons from 1975 to 1990. These production increases are attributable to NERCO Spring Creek and Consolidated CX Ranch projects and low scenario developments. The increments of production from 38.5 to 40.5 million tons are related to the Pearl Mine production.

The high scenario estimates of coal production in Big Horn County, Montana reflect the increased production related to Shell Oil Youngs Creek mine and developments within the probable scenario. By 1985, the total cost production could increase from 9.1 to 50.5 million ton of which 2.0 million ton is related to the Pearl Mine production.

Although significant coal production increases are projected for the total impacted area, the majority (41.4 million tons) of the potential increased production of 48.4 million ton will occur in Montana's Big Horn County. Of this total increase, the Pearl Mine will account for 2 million ton.

C. Employment

The model generates employment projections for the low, probable, and high scenarios for the sets of alternatives of 1) without Pearl Mine, all miners residing in Wyoming, 2) with Pearl Mine, all miners residing in Wyoming and 3) with Pearl Mine with 50 percent of the miners residing in Big Horn County, Montana and 50 percent of the miners residing in Sheridan County, Wyoming. These data are projected by employment categories of miners, economic base, ancillary and total employment. (Table 2). The category of miners includes individuals employed in the mining of coal, supervisory clerical, secretarial, maintenance and construction personnel for the mine.
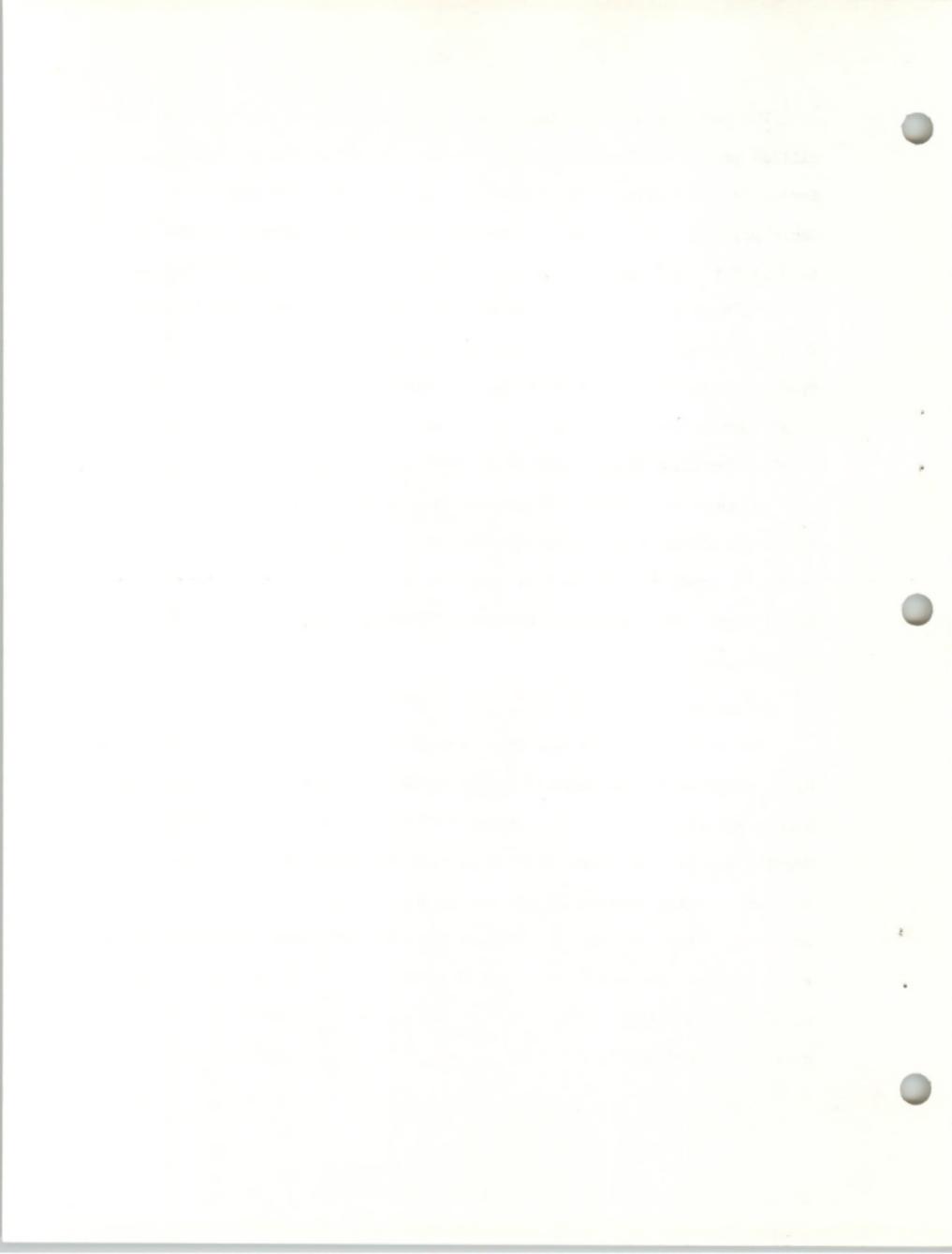
Table 2
Employment

	With Pearl Mine Wyoming Miners Only				With Pearl Mine Wyoming Miners Only				With Pearl Mine 50-50 Montana-Wyoming Miners			
	1975	1980	1985	1990	1975	1980	1985	1990	1975	1980	1985	1990
Montana A												
Low												
Miners	0	0	0	0	0(a)	0(b)	0(c)	0(d)	208	489	555	555
Ecm.Base	2036	2036	2036	2036	2036	2036	2036	2036	2244	2526	2591	2591
Ancillary	1804	2212	2633	3072	1804	2212	2633	3072	1903	2531	3141	3753
Total Empl.	3840	4248	4669	5108	3840	4248	4669	5108	4147	5055	5732	6344
Probable												
Miners	0	0	0	0	0	0	0	0	208	617	785	785
Ecm.Base	2036	2036	2036	2036	2036	2036	2036	2036	2244	2653	2821	2821
Ancillary	1804	2212	2633	3072	1804	2212	2633	3072	1903	2671	3326	4015
TotalEmpl.	3840	4248	4669	5108	3840	4248	4669	5108	4147	5264	6147	6837
High												
Miners	0	0	0	0	0	0	0	0	207	690	993	993
Ecm.Base	2036	2036	2036	2036	2036	2036	2036	2036	2243	2736	3029	3029
Ancillary	1804	2212	2633	3072	1804	2212	2633	3072	1902	2676	3462	4205
Total Empl.	3840	4248	4669	5108	3840	4248	4669	5108	4145	5372	6492	7234
Wyoming												
Low												
Miners	443	714	1082	1125	430	1027	1323	1338	273	595	659	704
Ecm.Base	3936	4457	4632	4668	4023	4360	4866	4781	3816	4123	4212	4247
Ancillary	5465	6570	7354	8082	5431	6798	7591	8166	5392	6271	6916	7562
Total Empl.	9451	11027	11736	12750	9503	11163	12457	13037	9208	10393	11123	11809
Probable												
Miners	430	1145	1550	1585	430	1107	1683	1719	273	713	877	934
Ecm.Base	4023	4533	5073	5128	4023	4750	5226	5262	3816	4256	4472	4447
Ancillary	5431	6733	7792	8522	5981	6138	7994	8202	5392	6411	7181	7875
Total Empl.	9503	11471	12865	13750	9503	11503	13170	13064	9208	10666	11623	12355
High												
Miners	430	2202	3531	3647	430	1987	3665	3177	273	1497	2671	2182
Ecm.Base	4023	5945	7074	6531	4023	5642	7208	6713	3816	4930	5914	5725
Ancillary	5431	7221	9333	10453	5431	7139	9520	10613	5332	6773	8535	9446
Total Empl.	9503	13315	15469	17343	9503	13023	17327	17831	9201	11763	17747	15171
Total Employment												
Low	13,291	15,275	16,455	17,958	13,343	16,355	17,126	18,115	13,355	15,456	16,816	16,713
Probable	13,343	15,777	17,554	18,958	13,343	16,055	17,839	19,172	13,355	15,930	17,772	19,184
High	13,357	17,114	21,133	22,156	13,343	17,577	21,376	22,437	13,352	17,136	21,241	22,405
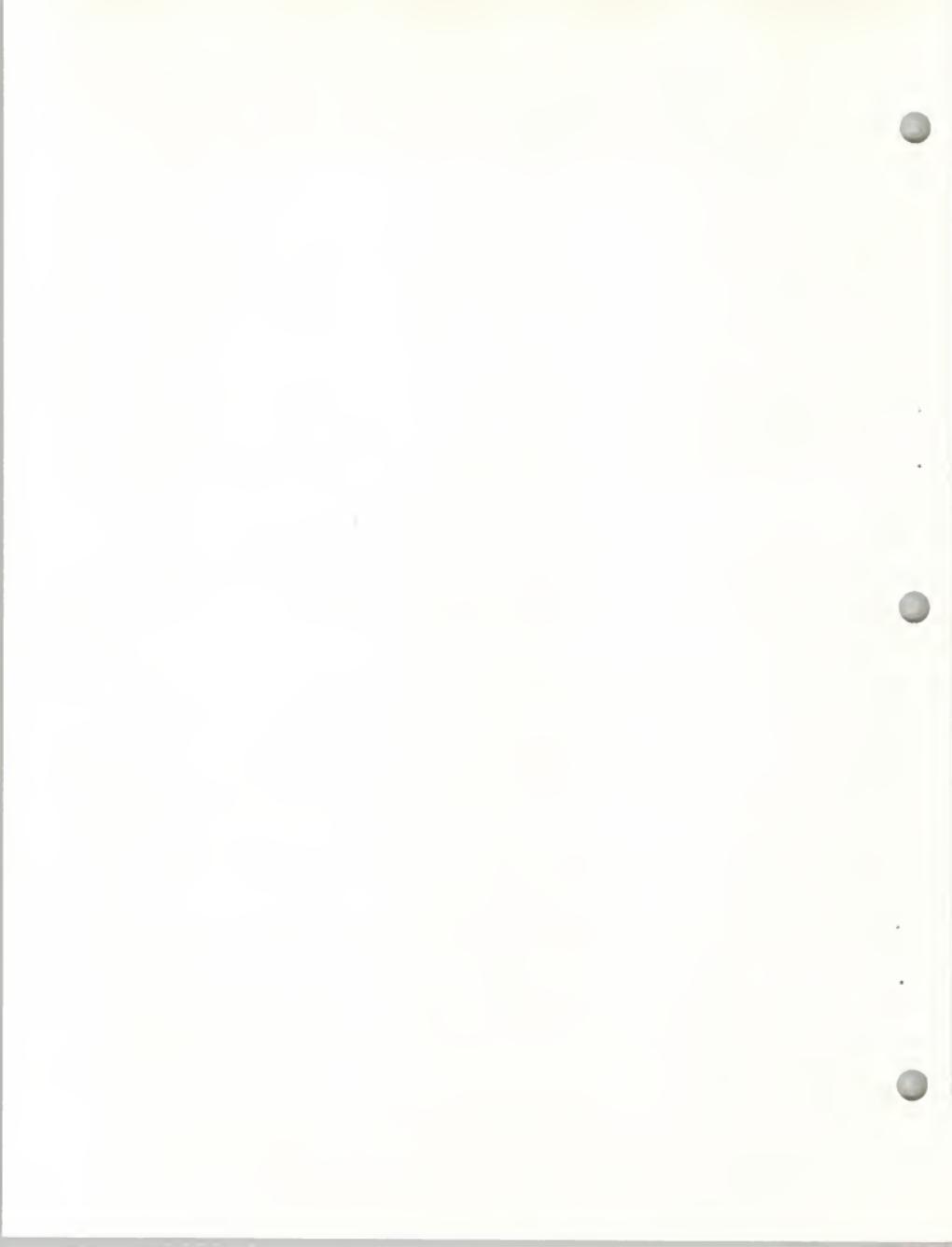
The economic base category includes miners and manufacturing, agriculture, transportation and federal personnel.

The ancillary employment category excludes those individuals employed in the economic base. It does include employers, proprietors, individuals, state and secondary personnel.

The sum of economic base and ancillary employments equal total employment.

The potential total employment for the impacted area increases 68.6 percent from 13,291 in 1975 to 22,405 in 1990. This increase depicts increases in each of the employment categories for each set of alternatives and scenarios. The total employment increases 34.4 percent from 1975 to 1990 for the low scenario compared to 41.3 percent and 65.9 percent without the Pearl Mine for the probable and high scenarios, respectively. The addition of the Pearl Mine with all miners residing in Wyoming increases total employment 1.6 percent, for the low scenario, 1.7 percent for the probable scenario and 1.3 percent for the high scenario for 1990.

In comparing the total employments with the Pearl Mine with all miners residing in Wyoming versus 50 percent of the miners residing in Wyoming and 50 percent residing in Montana, increments occur in each scenario. The distribution of miners between the two areas result in an increase of twelve in the total employment for 1975 and this difference is same through 1990. Addition of the Pearl Mine does increase total employment in the impacted area but these increases tend to be low when considered on a percentage basis.

However, the impact on total employment does present a different situation when each segment of the impacted area is considered separately. For Montana,
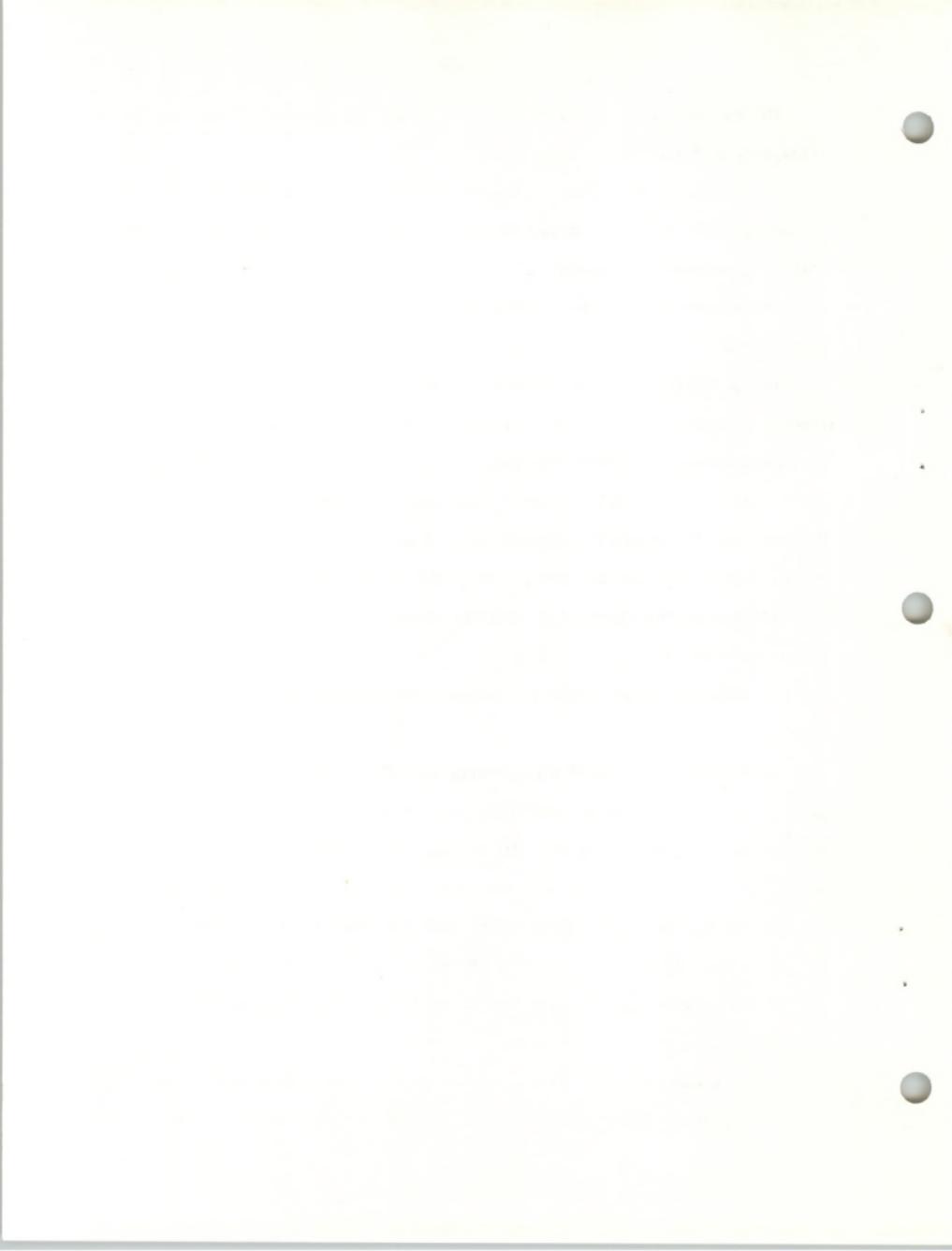
total employment and each of the employment categories tend to remain the same for each scenario with increases indicated during each five year period. Additionally, with or without the Pearl Mine with all miners residing in Wyoming, the total employment for Montana is not affected. The number of Montana miners and economic base employment is constant for each year for each scenario. Although the ancillary and total employment categories are identical within each scenario, each category demonstrates increased employment for each period of time from 1975 to 1990. These data indicate ancillary employment increases. 70.3 percent and total employment increases 33.0 percent from 1975 to 1990 in Montana with or without the Pearl Mine as long as the miners reside in Wyoming. These data indicate the increased demand for ancillary services through employment in Montana as related to economic development activities associated with mining employment.

With the development of the Pearl Mine and with miner's residencies evenly distributed between Montana and Wyoming, the employment situation is influenced. This set of alternatives provides increased employment in each employment category for each scenario with the most significant increases occurring in mining. In the probable scenario, the number of miners would increase 277 percent from 1975 to 1985 and remain constant to 1990. For the same time period, the economic base would increase 25.71 percent. The ancillary employment illustrates increases for each time period on an increase of 110.7 percent from 1975 to 1990. The total employment for this scenario, 64.7 percent increase in meets the increase in miners, economic base and ancillary employment. The influence distributing the residencies of miners equally among Montana and Wyoming for the Pearl Mine generates significant
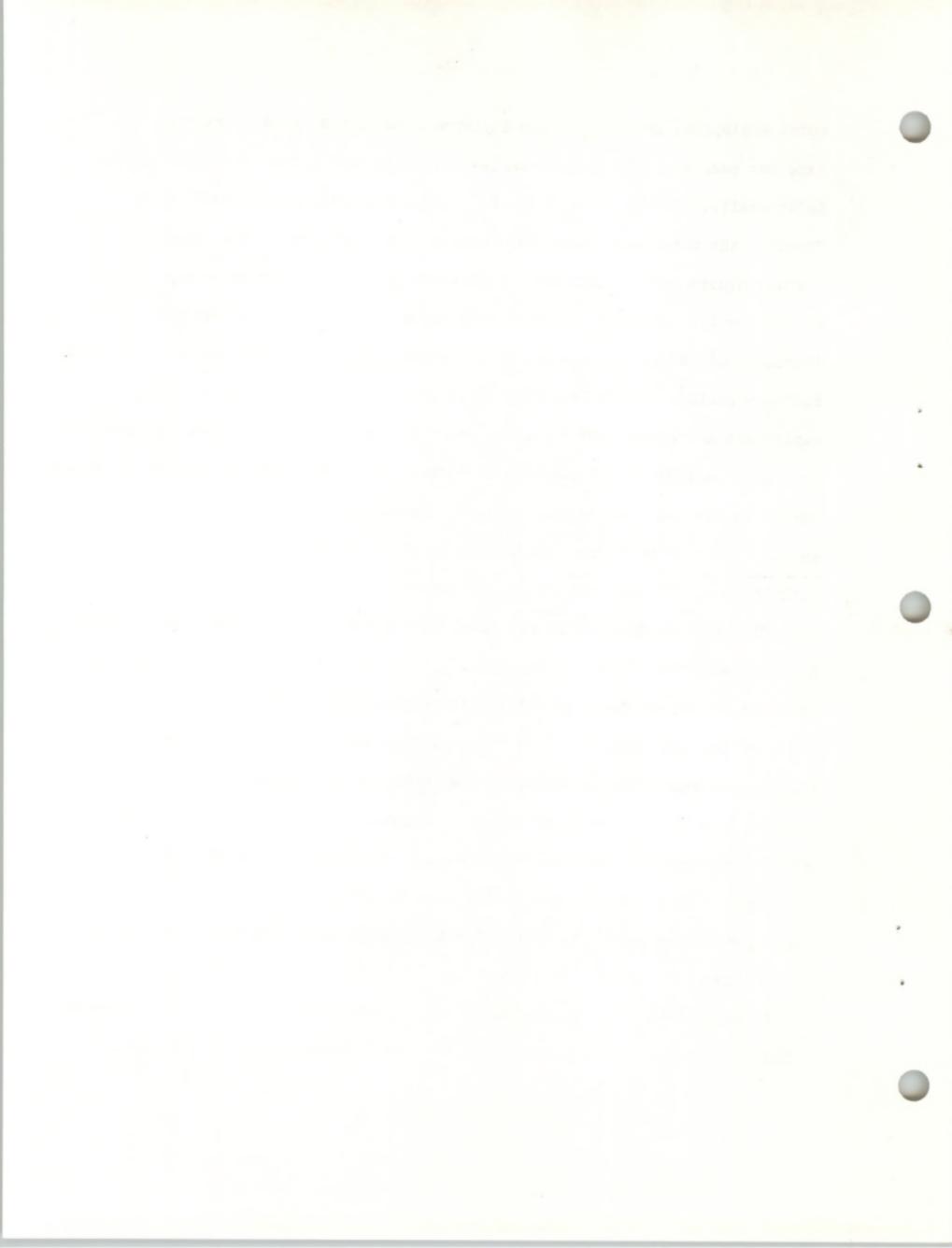
equally among Montana and Wyoming for the Pearl Mine generates significant increases in employment in Montana. The same general increases exist for the low and high scenarios with smaller increases related to the low scenario and larger increases related to the high scenario.

The employment opportunities in Wyoming are considerably different than Montana. Without the Pearl Mine with all miners residing in Wyoming, total employment and each employment category demonstrates increases in each scenario from 1975 to 1990. In the probable scenario, employment for miners increases from 480 to 1585, while the economic base and ancillary employments increase 27.5 and 57.3 percent, respectively, from 1975 to 1990. During this time period, total employment increases 44.5 percent. There are significant employment impacts for Wyoming which are independent of the Pearl Mine and are related to current development activities.

The impact on employment in Wyoming due to the Pearl Mine when all miners reside in Wyoming does not appear until 1980 but continues to 1990. The initiation of the Pearl Mine creates employment increases from 1975 to 1980 in the magnitudes of 182 miners, 155 ancillary employees, and 337 total employees in the probable scenario. From 1980 to 1990, 25 additional employment positions are generated in ancillary employment due to existance of the Pearl Mine. The same general trends exist for the low and high scenarios as with the probable scenario with smaller employment changes associated with the low scenario and larger employment increases associated with the high scenario.

The impact on employment in W   associated with the distribution of miners from the Pearl Mine between   tana and Wyoming results in decreased employment opportunities in Wyoming   in contrasting employment opportunities
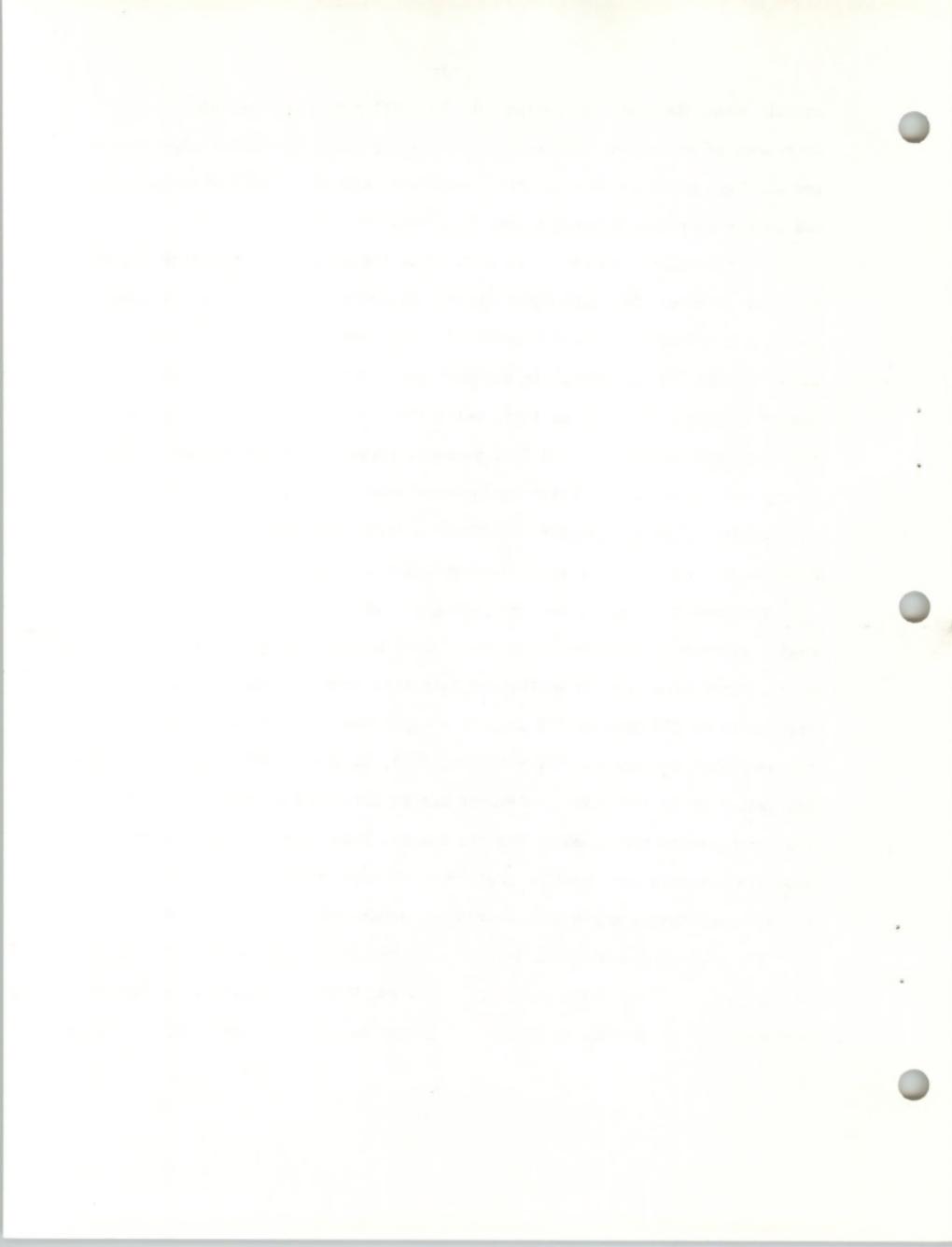
of the Pearl Mine with all miners residing in Wyoming to 50 percent of the miners residing in Wyoming, total Wyoming employment decreases 295, ancillary decreases 89 and the economic base decreases 207 in 1975 for the probable scenario. Wyoming's projected employment in 1990 also reflects decreased employment due to distribution of Pearl miners between Wyoming and Montana. The distribution of miners results in a decrease of 12.2 percent in total employment as well as 10.5 percent decrease in ancillary and 15.5 percent decrease in the economic base for 1990 comparisons in the probable scenario.

The employment impact between the scenarios when comparisons are made for 50 percent Wyoming miners is considerable beyond 1975. In the high scenario, total Wyoming employment will reach 15,171 in 1990 compared to 11,808 in the low scenario. The same general employment differences exist between employment categories. For example, ancillary employment increases 16.3 percent from 1975 to 1980 with 10.3 percent and 9.3 percent increases to 1985 and 1990 respectively for the low scenario. In the high scenario, ancillary employment increases 25.6 percent from 1975 to 1980, 26.0 percent from 1980 to 1985 and 10.7 percent from 1985 to 1990. The relative employment change differs among the scenario. Additionally, the actual increases in employment tend to be significant when considering different development scenarios.

The impact on total employment and each employment category creates positive employment change for each scenario. For the total impacted area employment opportunities are increased during each of the five year periods. The initiation of the Pearl Mine does not have a relatively large impact on

total employment or employment categories when considering the employment for the entire impact area.

However, the initiation of the Pearl Mine does have a relatively large impact on employment when considering the Wyoming and Montana employments separately. A relatively large employment impact results in Montana when 50 percent of the miners from the Pearl Mine reside in Montana. This impact results in relatively large employment increases for each employment category. The employment impact in Wyoming is significant due to the initiation of the Pearl Mine. The potential impact upon employment for each segment of the impacted area from 1975 to 1990 appears significant. This impact materializes due to increases in number of miners and ancillary employments.

D. Population

The Model projects population changes within each set of alternatives for each possible scenario. Additionally, the model projects population changes for each county and town within each segment of the impacted region (Table 3). For each possible alternative and scenario, the 1975 population without the Pearl Mine and all miners residing in Wyoming is utilized as the base year for purposes of computing percentage changes in population except in the third alternative for town population.

The population for the total impacted area, Big Horn and Sheridan Counties, for the probable scenario is 31,100 in 1975 and increases 37.9 percent in 1990 without the Pearl Mine. The projected town population for this scenario demonstrates a population increase of 20.7 percent from 1975 to 1990. The implication of this increase, suggests the town of Sheridan, Wyoming will incur a large population increase due to the developments related to mining and associated activities which are currently in progress without the Pearl Mine.

Table 3
(continuation)

Table 3. *[title illegible]* ... Final Impacted area and Total Impact
... impacted area in Type 3 Stimulus and Services
for 1975, 1980/1985 and 1990.

	Without Pearl Mine Wyoming Miners Only				With Pearl Mine Wyoming Miners Only				With Pearl Mine 50-50 Montana Wyoming Miners			
	1975	1980	1985	1990	1975	1980	1985	1990	1975	1980	1985	1990
	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %
Montana												
Low County	(0) 9.5%	(2.5) 13.7	(9.3) .0552	(25.0) 12004	(0) 9506	(2.5) 9349	(11.8) 11552	(25.0) 1204	(3.0) 10373	(9.3) 11407	(24.3) 12410	(51.8) 14553
Town	NA	NA	NA	NA	NA	NA	NA	NA	NA	(0) 623	(130.2) 2192	(242.2) 3953
Probable County	(0) 9.5%	(0.5) 9349	(9.3) 10552	(25.0) 12004	(0) 9506	(2.5) 9349	(11.8) 11552	(5.0) 1204	(3.0) 10373	(32.4) 11756	(58.9) 15338	(81.6) 15556
Town	NA	NA	NA	NA	NA	NA	NA	NA	NA	(0) 1272	(124.4) 3854	(236.4) 5292
High County	0 9.5%	(2.5) 9349	(9.3) 10552	(25.0) 12004	(0) 9506	(2.5) 9349	(11.8) 11552	(10.0) 1204	(3.0) 10373	(24.0) 11926	(155.4) 17.5	(201.5) 15297
Town	NA	NA	NA	NA	NA	NA	NA	NA	NA	(0) 1412	(138.4) 3415	(301.7) 5733
Wyoming												
Low County	(0) 24%	(9.3) 23,528	(19.5) 25,561	(35.3) 2352	(0.4) 21475	(12.4) 24541	(33.3) 25999	(58.0) 29661	(-1.8) 2102	(5.0) 22410	(12.3) 27013	(26.6) 27002
Town	(0) 14.53	(14.5) 15,775	(23.6) 3,293	(31.6) 28216	(0.6) 14742	(13.1) 17313	(22.3) 2.57	(45.6) 27748	(-2.77) 19253	(7.3) 15225	(-8.2) 19530	(23.5) 20874
Probable County	(0) 21475	(12.3) 24239	(25.2) 27127	(43.7) 33357	(0) 21475	(15.2) 24523	(38.5) 27913	(61.0) 31973	(-2.2) 21021	(6.6) 22916	(21.3) 24796	(41.1) 95371
Town	(0) 14753	(13.6) 17435	(33.3) 20374	(63.7) 24173	(0) 14742	(22.3) 18035	(41.5) 22550	(67.6) 24540	(-3.2) 14265	(9.6) 1643	(23.5) 8413	(42.5) 21493
High County	(0) 21475	(22.3) 25460	(57.4) 33553	(76.4) 37573	(0) 21475	(22.0) 26357	(51.0) 31941	(79.3) 35578	(-2.3) 21019	(14.5) 24577	(71.1) 33331	(69.3) 35534
Town	(0) 14753	(32.5) 19671	(83.5) 27115	(111.5) 31193	(0) 14742	(32.6) 19414	(67.4) 27653	(111.5) 31815	(-3.8) 14235	(23.0) 17849	(57.8) 23533	(83.5) 27057
Total												
Low Counties	(0) ...	(7.4) 33576	(16.6) 34155	(32.1) 42...	(.3) 31101	(9.3) 33915	(16.1) 36742	(34.0) 41555	(1.2) 31394	(9.3) 33337	(13.3) 36973	(31.4) 41532
Towns	...	(14.5) 15775	(23.6) 18943	(...) 28...	(0.6) 14742	(13.1) 17313	(14.1) 1957	(32.5) 27732	(-2.7) 14263	(13.6) 2550	(22.3) 19453	(23.5) 24745
Probable Counties	...	(7.4) 33755	(21.2) 37673	(25.1) ...	(0) 31101	(11.3) 34907	(24.7) 33155	(.1) ...	(.9) 31374	(11.5) 34072	(...) 3922	(...) 43577
Towns	...	(13.6) 17435	(33.3) 29374	(...) ...	(0) 14742	(22.3) 15035	(26.5) 2...	(...) ...	(-3.2) 14268	(18.35) 17435	(...) ...	(...) ...
High Counties	...	(12.5) ...	(42.5) ...	(62.5) ...	(0) ...	(16.4) ...	(34.5) ...	(12.5) ...	(.9) 31372	(17.4) 36525	(42.0) 42...	(...) 511
Towns	...	(13.5) 17511	(33.7) 27115	(111.3) 30195	(0) 14742	(32.1) 19614	(67.4) 27653	(11.5) 31815	(-3.8) 14265	(30.5) 19235	(83.5) 27003	(...) 32074

These data also indicate that by 1990 the population of Sheridan will at a minimum increase 51.6 percent and could experience a maximum population increase of 111.3 percent by 1990. Additionally, the total population for the impacted area could increase from 31,017 (low scenario) in 1975 to a maximum population of 49,947 (high scenario) without the Pearl Mine.

The exact impact of the Pearl Mine on populations within the impacted area is dependent upon the precise development alternative pursued. If the development alternative of the Pearl Mine with all miners residing in Wyoming is pursued, the probable scenario indicates the total population for the impacted area increases 39.9 percent from 1975 to 1990. The population increases 67.8 percent for the town of Sheridan, Wyoming during this period. Within the probable scenario, population increases attributable to the Pearl Mine range from a 1.7 percent increase in 1975 to a 2.0 percent increase in 1990 for the total population while the impact on Sheridan ranges from 3.5 percent to 4.1 percent increases. The minimum expected total population increase from 1975 to 1990 is 34 percent compared to a potential maximum population increase of 62.5 percent. The town of Sheridan may anticipate a minimum population increase of 55.5 percent to a potential maximum population increase of 115.6 percent from 1975 to 1990.

The total population projections with the development of the Pearl Mine and equal distribution of miners between Wyoming and Montana increase similar to the previous sets of alternatives. The major differences initially exist in the population where most of the miners reside in Montana. This creates a negative population change for towns in 1990. However, these

population decreases are off set by 1980 with population increases. By 1990 total population, increased 11.7 percent for the impacted area. Under this alternative, population increases will range from a 34.4 percent increase to a 61.0 percent increase for counties from 1975 to 1990 while the towns maximum population increase is 122.8 percent.

The population increases in Big Horn County, Montana for the first two sets of alternatives are identical. The Pearl Mine has no impact on total population in Big Horn County with all of the miners residing in Wyoming. Although population increases do occur in Montana from 1975 to 1990, these increases are attributable to activities other than the Pearl Mine, the population of Big Horn County is projected to increase approximately 25 percent from 1975 to 1990 with a significant proportion of this increase occurring after 1975. This population increase is not related to miners residing in the area but is related to Montana serving as a residence site for ancillary employees and segments of the economic base employment. Secondly, the population increase is not created by employment opportunities entirely.

The development of the Pearl Mine with an even distribution of miners residences between Big Horn County, Montana and Sheridan County, Wyoming, creates population impacts for Montana. In this alternative set, a town evolves in Montana which results in population increases. In the probable scenario, the town has zero population in 1975, increases to 2854 in 1980 and then increases to 5 in 1990. During this same time span, the County population increases 22.7 percent, 33.0 percent and 61.6 percent for 1980, 1985 and 1990, respectively. The effect on Montana's total population

attributable to the Pearl Mine is 19.9 percent for 1980, 29.1 percent for 1985 and 36.6 percent in 1990. The potential population impact for Big Horn County ranges from a minimal population increase of 8.0 percent to a potential maximum increase of 69.5 percent. The potential population impact for a town in Big Horn County ranges from no increase to a maximum increase of 301.7 percent.

The impact on population in Wyoming without the Pearl Mine indicates increases of 43.7 percent for Sheridan County and 63.7 percent for the town of Sheridan from 1975 to 1990 in the probable scenario. These increases are existing at each five year interval for both the county and town. As such, the current development activities which are progressing have a major population impact in Wyoming without the Pearl Mine. Over the 15 year span the County of Sheridan may expect population increases from a minimal of 35.3 percent to a maximum of 76.4 percent. The town of Sheridan may expect population increments for a minimum of 51.6 percent to a maximum of 111.3 percent.

The development of the Pearl Mine in Montana will all miners residing in Sheridan County, Wyoming will increase the population impact for the segment of the impacted area. In the probable scenario, the increment in population for Sheridan County attributable to the Pearl Mine is 2.4 percent in 1980, 2.3 percent in 1985 and 2.3 percent in 1990. Similar, population increases are attributable to the Pearl Mine for the town of Sheridan. Specifically, Sheridan population increases related to the Pearl Mine are 2.5 percent in 1980, 3.3 percent in 1985 and 4.1 percent in 1990. In essence, with the development of the Pearl Mine the total population in Sheridan County will increase 46.5 percent in 1980 rather than 43.7 percent. For the town of Sheridan, the development of the Pearl Mine will create a population increase of 489 individuals in 1990.

The range of population increases with the Pearl Mine is a minimum of .4 percent increase to a maximum increase of 79.3 percent for Sheridan County. The town of Sheridan may expect population increases from a minimum of 18.1 percent to a maximum increment of 115.6 percent from 1975 to 1990 based on this alternative.

The development of the Pearl Mine with the mining population evenly distributed between Montana and Wyoming, reduces the population impact in Sheridan County and the town of Sheridan. In comparing the probable population impact in Sheridan County for the Pearl Mine between all Wyoming residence miners to 50 percent of Wyoming residence miners, the population increases for 1980 is 15.2 percent versus 6.6 percent. The same general characteristics exist for other time intervals and for the town of Sheridan. For example, the projected 1990 Sheridan population is 24,740 with all miners residing in Wyoming as compared to 21,418 if only 50 percent of the miners reside in Wyoming. Within this alternative set for 1990, the county population projections range from a 26.6 percent increase to a 57.3 percent increase and for the town from 38.8 percent to 83.5 percent.

In general, the population impacts from the existing development activities on the impacted area are significant. Initially, these impacts are incurred in Wyoming and in particular in the town of Sheridan. The proposed development of the Pearl Mine increases the population impacts in relative and absolute magnitudes for the entire impact area. Significant proportions of the population impacts are incurred by Wyoming and by the town of Sheridan. The development of the Pearl Mine in conjunction with a town in Montana relives part of the population impact on Wyoming and on the town of Sheridan. However, this alternative transfers the population impact to Montana.

E. Revenues

The Coal Town II Model generates projected revenues for each state, county, town and school district in which development activities are occurring or are planned (Table 4).

The state revenue projections are net revenues based upon existing statutes and regulations within each state. In the case of Montana, the state revenue projections include mine taxes and non-mine taxes less intergovernment flows from the state to governmental units at the county, town and school district levels. The intergovernment flows included only those revenues which are required by statute and regulations to be automatically related to other governmental units. The intergovernment flows do not include coal impact, trust funds which are not automatically rebated to units of government. Thus, the state revenue projections are net state revenues generated in the impacted county.

The model is comprehensive in that it does consider all taxes applicable for each unit of government.[2]

For example, the model does consider the school foundation level, county equilization tax and net flow from state funds for the State of Montana. Additionally, the model considers revenues from property taxes, personal income tax, corporation income tax, highway users tax, alcoholic beverage tax, tobacco tax, mineral resource tax, insurance tax, inheritance tax etc. For the State of Wyoming the model includes property tax, sales and use taxes, highway user taxes and fees, natural resource taxes, alcoholic beverage tax, cigarette tax and miscellaneous revenues such as the revenue for selected public services. Considering these revenue sources, the model projects expected revenue for the state, county, town and school units based upon projected development of mining and related activities.
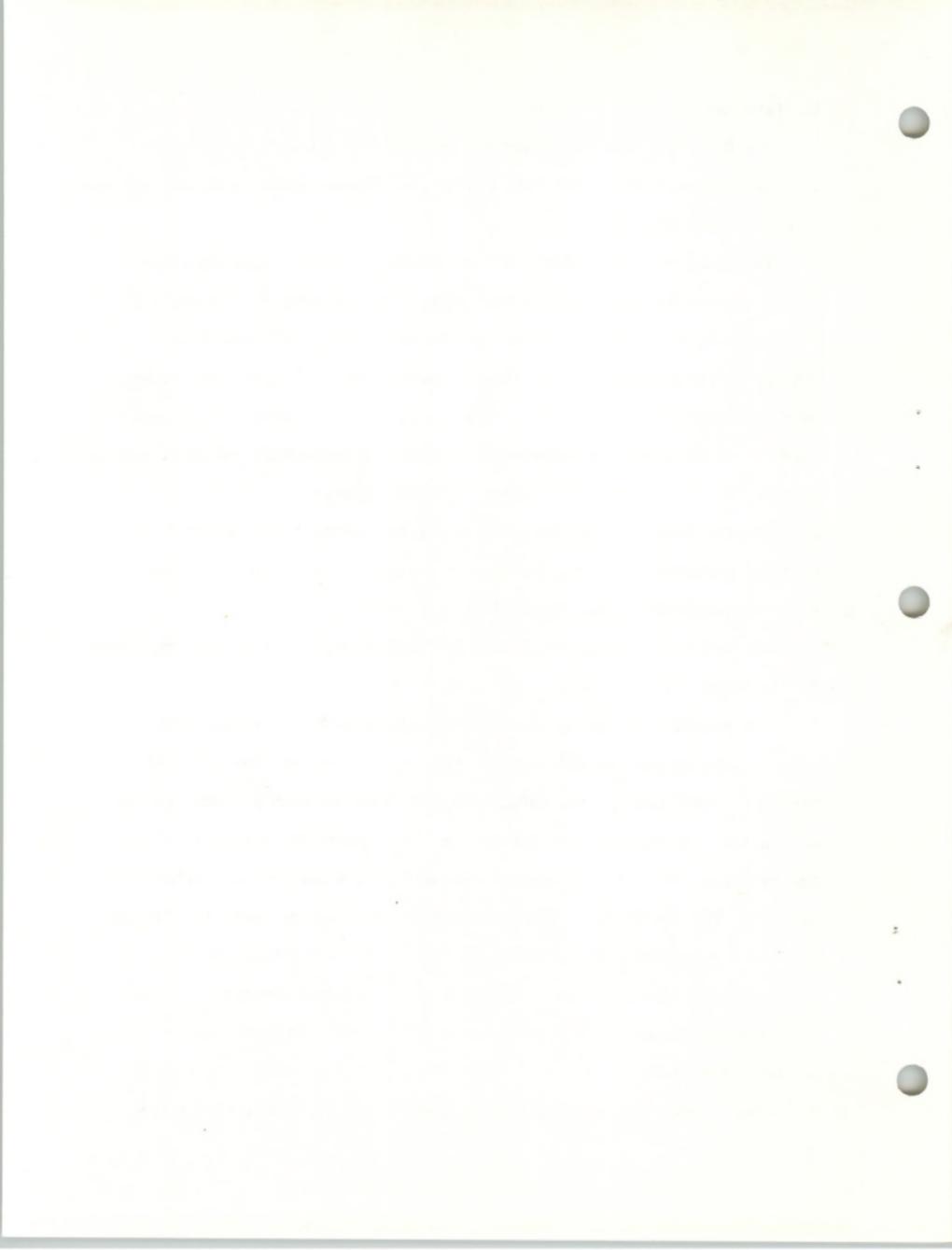
Table 4
Revenues
Million $

|	Without Pearl mine, Wyoming Miners Only			With Pearl mine, Wyoming Miners Only			With Pearl mine, 50-50 Montana-Wyoming miners		
	1980	1985	1990	1980	1985	1990	1980	1985	1990
Montana									
Low									
State	27.440	35.737	38.697	27440	39.644	41.603	27.550	40.173	42.398
County	1.602	1.891	2.056	1.592	1.971	2.136	1.634	2.014	2.195
Town	-.077	.185	.531	-.099	.265	.531	.303	.574	1.106
School	6.539	7.365	8.042	6.537	7.470	8.146	7.435	8.550	9.523
Probable									
State	31.737	53.543	60.503	31.737	61.455	63.411	32.000	62.137	64.505
County	1.722	2.491	2.656	1.722	2.571	2.737	1.761	2.630	2.818
Town	-.077	.185	.531	-.099	.195	.531	.387	.741	1.235
School	6.696	8.943	9.555	6.696	9.201	9.822	7.322	9.702	10.862
High									
State	31.737	73.059	75.047	31.787	75.977	77.957	32.058	76.903	79.302
County	1.722	2.371	3.057	1.722	2.971	3.137	1.765	3.042	3.236
Town	-.077	.195	.531	.099	.105	.931	.425	.847	1.417
School	6.696	10.270	12.353	6.696	10.535	11.199	7.992	11.100	11.352
Wyoming									
Low									
State	-1.523	-1.630	-.043	-1.628	-1.863	-.103	-1.345	-1.363	.167
County	1.402	1.539	1.876	1.432	1.556	1.905	1.345	1.457	1.783
Town	1.622	1.884	2.369	1.683	1.932	2.455	1.502	1.724	2.172
School	12.779	13.709	15.205	13.157	14.474	15.530	12.084	12.952	14.131
Probable									
State	-1.659	-1.850	-.270	-1.760	-1.931	-.341	-1.424	-1.466	.044
County	1.441	1.614	1.774	1.470	1.639	2.004	1.347	1.503	1.837
Town	1.703	2.078	2.618	1.765	2.133	2.690	1.551	1.837	2.297
School	13.272	7.910	16.333	13.5??	6.?63	15.976	12.380	13.??	?.755
High									
State	.???	.563	2.200	.4??	.???	2.143	.877	.?7?	?.518
County	1.3??	2.226	2.573	1.3??	?.932	4.?66	1.715	?.???	2.???
Town	2.0??	2.9?5	3.400	2.9??	?.173	3.5?0	1.354	?.???	3.9??
School	15.1?	?.?35	22.604	15,1??	?9.70?	20.928	13.964	17.4?3	?.153
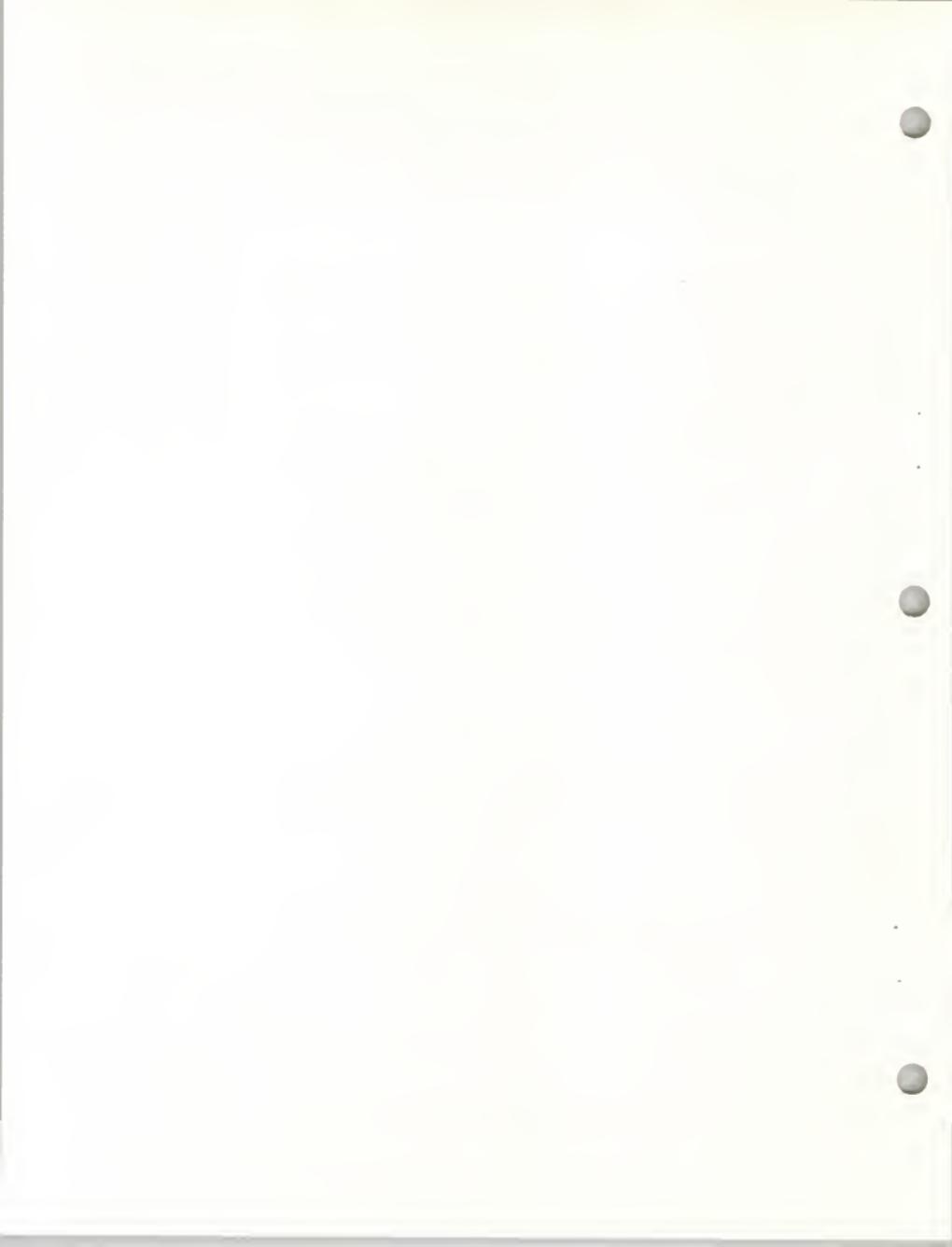
The data in Table 4 indicate the various levels of projected revenues for 1980, 1985 and 1990 for each set of alternatives and each scenario for each unit of government.

The projected State of Montana revenues based upon current activities in Big Horn County probably will generate $31.787 million of revenue by 1980 and increase to $60.503 million by 1990. Big Horn County's revenue would be $1.722 million in 1980 and increase to $2.656 million in 1990. The school district revenues increase 47.7 percent from 1980 to 1990. The State of Montana's projected revenues from 1980 to 1985 increase a minimum of 41.0 percent to a maximum increase of 136.1 percent. However, the majority of the potential revenue increase will be created by 1985. The same general pattern of increased revenues exist for Big Horn County and the school district.

The development of the Pearl Mine with all of the miners residing in Wyoming creates additional revenues for the State of Montana, Big Horn County and the school district after 1980. The increased state revenue attributable to the Pearl Mine is $2.909 million in 1985 and 1990 for the probable scenario. Additionally, the County and school district revenues will increase 3.2 percent and 2.9 percent by 1985 which are attributed to the development of the Pearl Mine. Additionally, the increase in revenues generated by the Pearl Mine for the county and school district from 1985 to 1990 are $81,000 and $266,000, respectively. With this alternative set, state revenues in 1990 may range from a low of $41.603 million to a minimum of $77.957 million while county revenues may range from $3.126 million to $3.137 million. School revenues in 1990 may range from a minimum of $8.146 million to a maximum of $11.149 million.
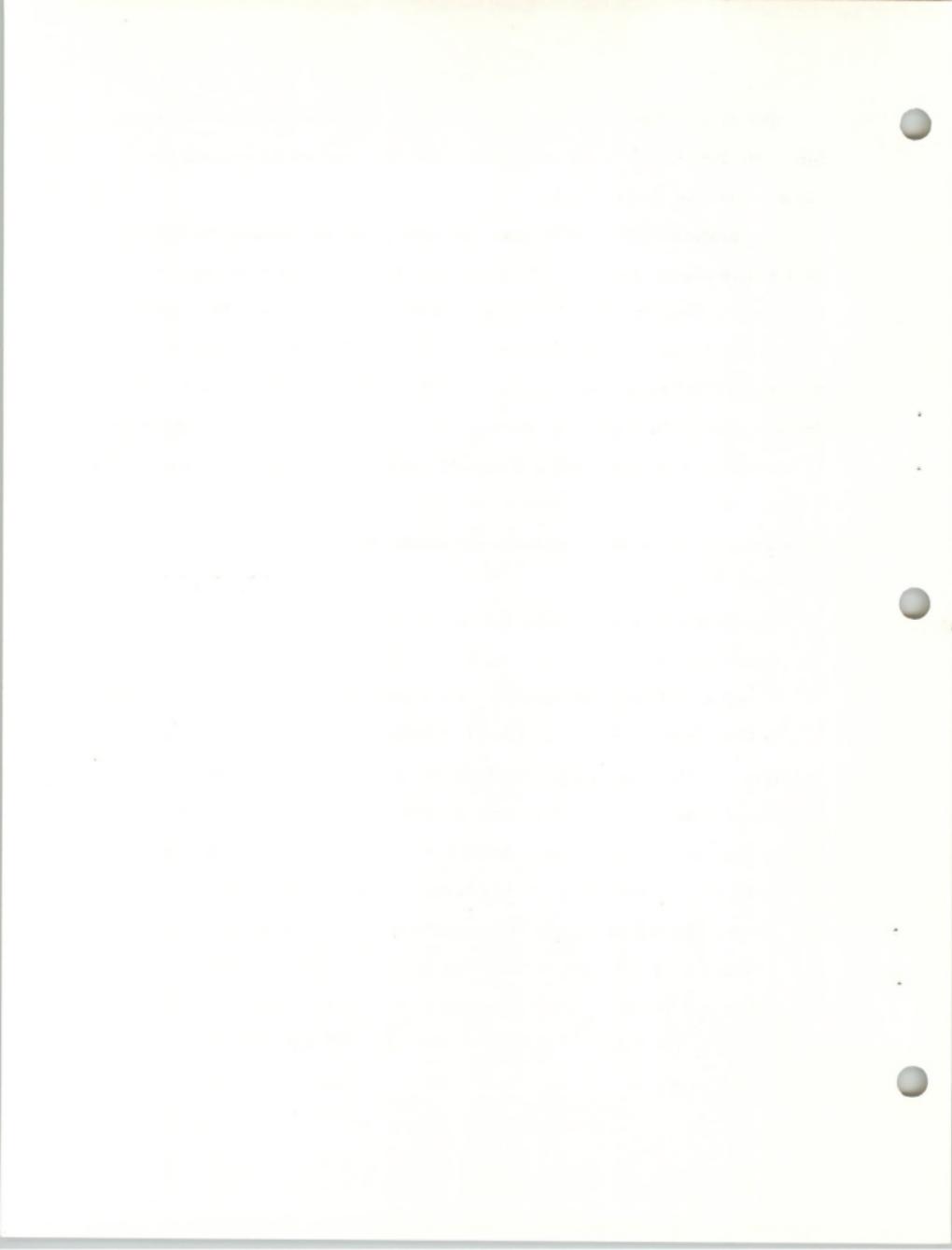
The revenue impact of Pearl Mine development with equal distribution of miners between Montana and Wyoming credates additional revenue increases in Montana. This alternative set for the probable scenario projected increased State of Montana revenues of approximately $4.0 million dollars in 1990 when compared to the Pearl Mine not developing. The additional revenues generated for the county tend to be relatively small, less than $100,000. However, the increased school revenues are relatively large. The projected school revenue in 1980 without the Pearl Mine is $6.698 million compared to $7.822 million in 1980 with the Pearl Mine development and miners distributed evenly among Montana and Wyoming. Thus, the school revenue increases 18.8 percent in 1980, 10.7 percent in 1985 and 13.7 percent in 1990 due to the development of the Pearl Mine under this alternative. The additional significant revenue impact of this alternative set is related to the development of a town in Big Horn County, Montana. The development of such a town in Montana would generate revenues of $387,000 in 1980, $141,000 in 1985 and $1.285 million in 1990 for the probable scenario. The range of town revenues geanrated in 1990 is from $1.06 million to $1.417 million. The range of State revenues is $42,398 million in 1990 to $79.302 million with a probable revenue of $64,505 million. Big Horn County revenue in 1990 will range from $1.106 million to $1.417 million with a probable revenue of $1.285 million.
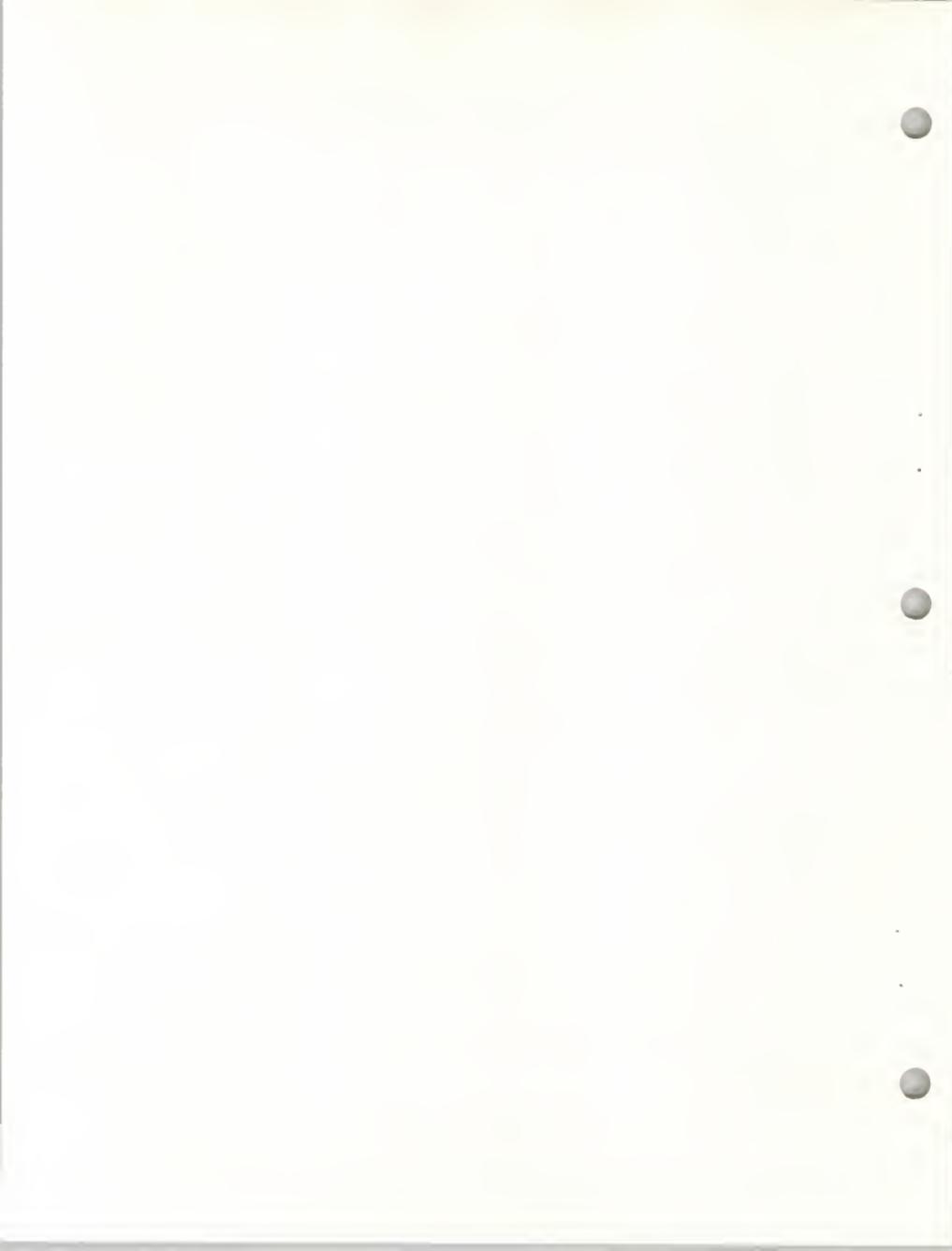
The projected tax revenues for the State of Wyoming and the local units
of government, county, town and school differ considerably from Montana.
The State of Wyoming has a projected negative revenue in the low and
probable scenarios in each year with the only exception being 1990 with the
Pearl Mine development and even distribution of these miners between Wyoming
and Montana.   The negative revenues, which are net after intergovernmental
flows from the State to local units of government, indicate the need for
state statutory revenue funds in the local area of impact in greater than
the revenue funds received under current taxation.   In the probable scenario
with the first two sets of alternatives the magnitude of this deficit
increases from 1980 to 1985 and then decreases in 1990.   The development of
the Pearl Mine with all miners residing in Wyoming increases this deficit
$100,000 in 1980, $81,000 in 1985, and $71 in 1990.   However, with the
development of the Pearl Mine and distribution of miners between the two
impacted counties, the state of Wyoming's deficit would be decreased $336,000
in 1980, $365,000 in 1985 and $297,000 in 1985 over the other alternatives
of Pearl Mine development.

The county, town and school revenues in Sheridan County will be increased
from 1980 to 1990 regardless of whether the Pearl Mine is developed or not.
County revenue increases 9.3 percent, town revenues increases 47.3 percent
and school revenue increases 18.9 percent from 1980 to 1990 if development
of existing facilities continue with the Pearl Mine.   Of these increases
the school revenues increase in a larger absolute amount than the others.
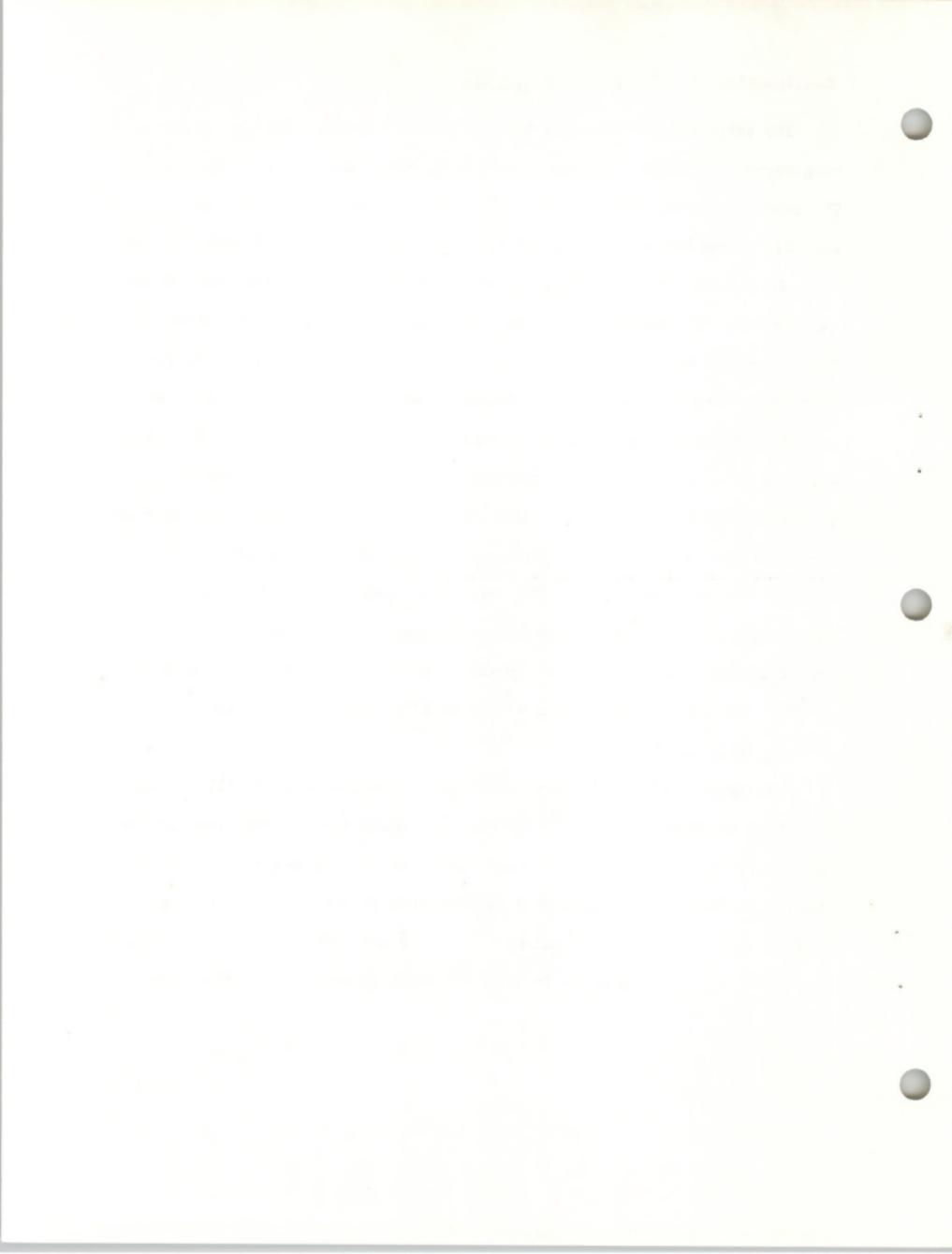
The introduction and development of the Pearl Mine with all miners residing in Wyoming provides for incremental revenues for each units of government. In the probable scenario over the ten year period, county revenue is increased $.925 million and school revenue is increased $3.052 million with the development of the Pearl Mine in this set.

The development of the Pearl Mine with miners evenly distributed between Montana and Wyoming reduces the revenues obtained by county, town, and school districts in Wyoming. However, Wyoming units of local government do experience and increase in revenue of the time span of 1980-1990. In comparing this alternative with the absences of Pearl Mine development the 1990 revenues obtained by county, town, and school units are reduced $167,000, $321,000 and $1.585 million, respectively.

The impact of development activities on Wyoming and local units of government revenues is significant.
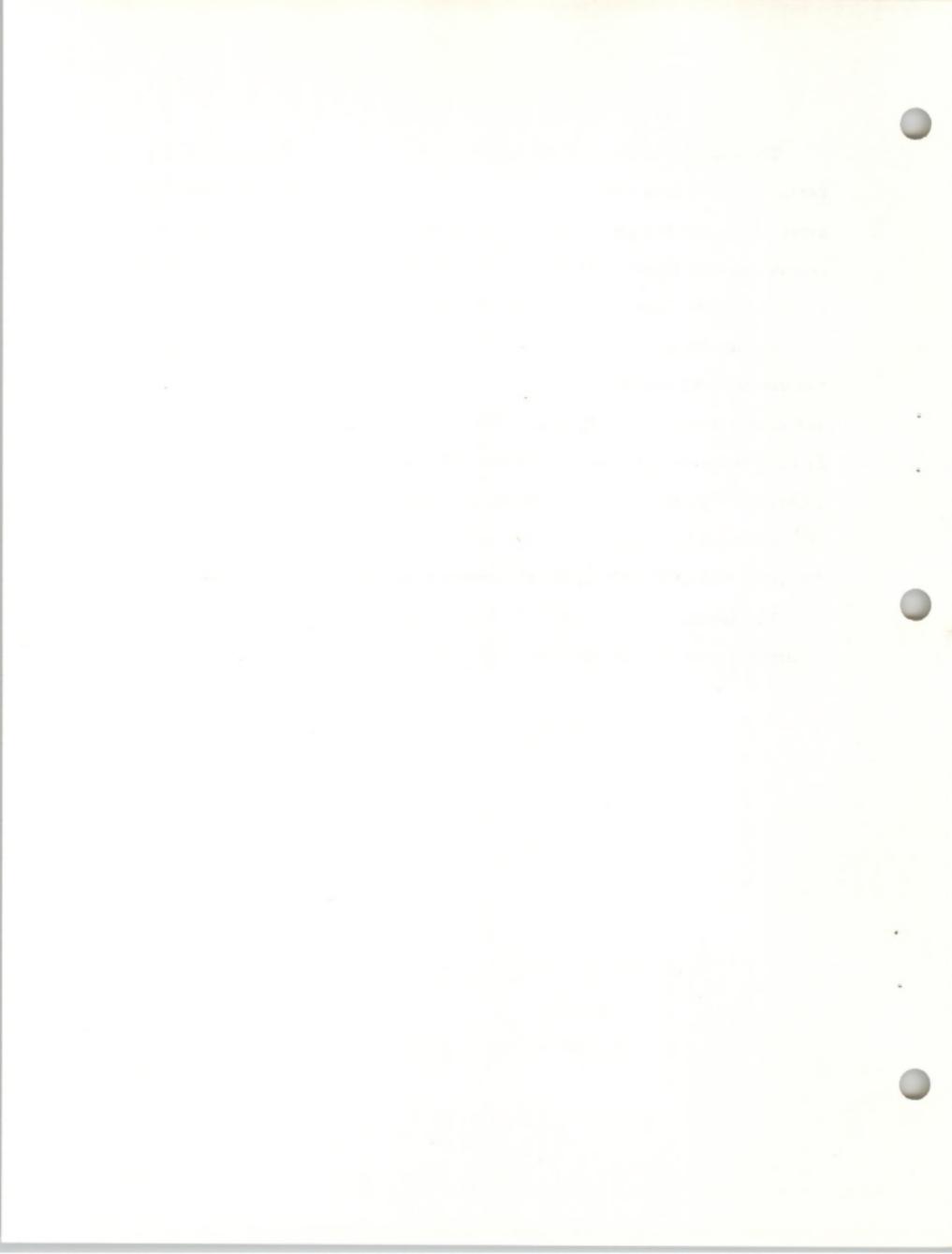
F. Expenditures

The model projects expenditures for county, town and school district units for each segment of the impacted area for each alternative set and scenario. These projections are based on passed expenditure patterns for each governmental unit and do reflect increased development activities. Projected expenditures consider the increased demand for public services associated with development activities. With the occurrence of increased mining, increased employment, increased population, increases are expected in governmental expenditures at each level.

The data in Table 5 demonstrate the increased expenditures associated with these development activities. The expenditures of Big Horn County are projected at $1.061 million in 1980 are increase 77.9 percent in 1985 and increase 49.6 percent in 1990 in the probable scenario without the development of the Pearl Mine. School expenditures increase 14.7 percent in 1985 and 56.7 percent in 1990 for the probable scenario. Although county and school expenditure impacts are projected to increase in each five year intervals, there is no difference among expenditure impacts among the three scenarios. Furthermore, the development of the Pearl Mine with all miners residing in Wyoming does not create additional revenue expenditures for county and school units. In essence, increased expenditures by Big Horn County and the school district are required because of development activities which currently exist and progress.

However, expenditure impacts will exist in the impacted area of Montana if the Pearl Mine is developed with the distribution of miners equally between Montana and Wyoming. With this alternative set, a town will
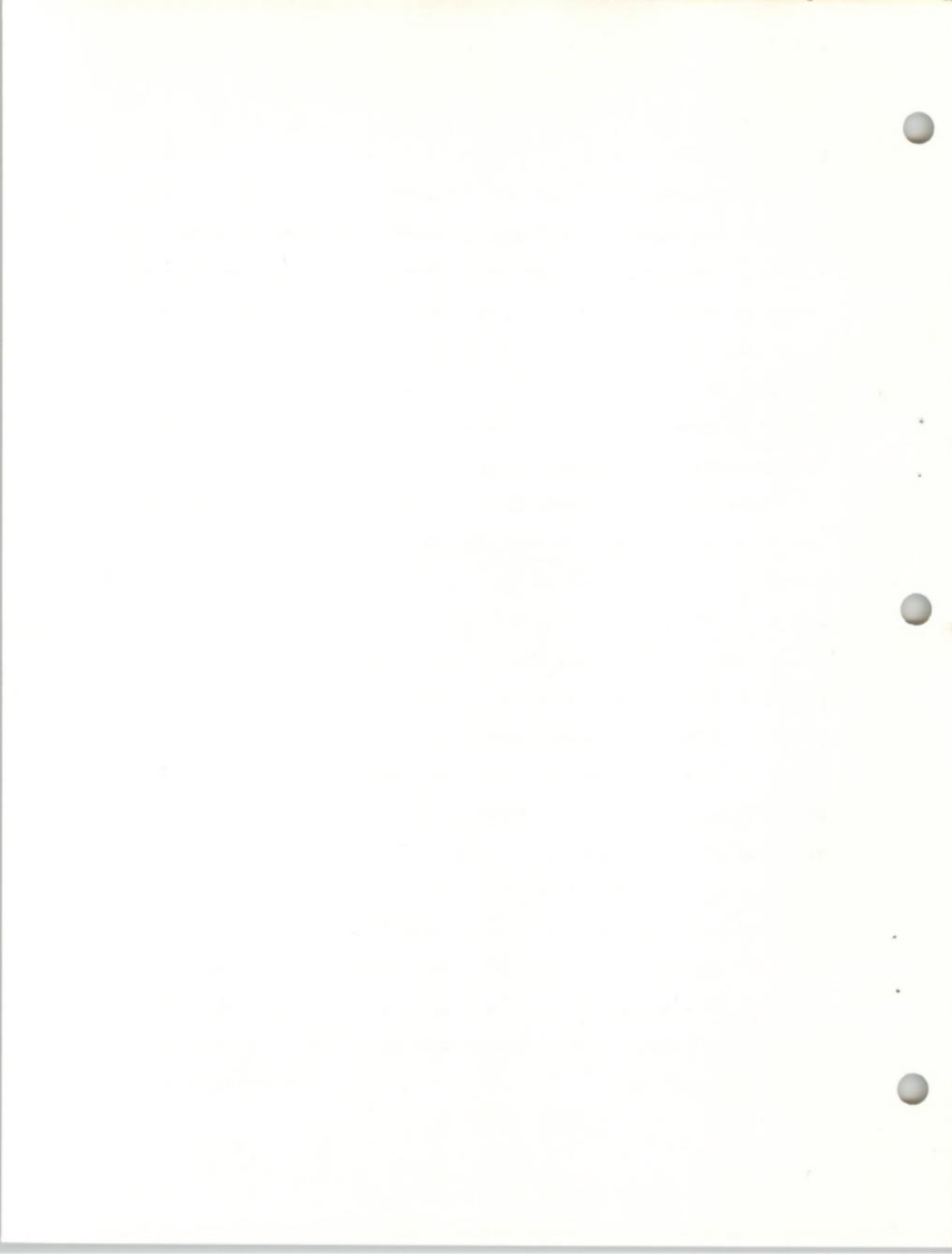
Table 5
Expenditures
million $

... ... Compon... of the impr... level
by Local ... of ... for East A... and Scenario
for 1980, 1985 and 1990.

	Without Pearl Mine, Wyoming Miners Only			With Pearl Mine, Wyoming Miners Only			With Pearl Mine, Scenario Montana Wyoming Miners		
	1980	1985	1990	1980	1985	1990	1980	1985	1990
Montana									
Low									
County	1.061	1.183	1.780	1.061	1.183	1.732	.933	1.341	2.047
Town	.395	.360	.335	.342	.441	.652	.353	.509	.867
School	3.266	3.746	5.353	3.266	3.746	5.863	3.121	4.475	7.227
Probable									
County	1.061	1.183	1.780	1.061	1.183	1.732	1.003	1.393	2.142
Town	.395	.360	.335	.340	.430	.637	.364	.547	.949
School	3.833	3.746	5.863	3.266	3.746	5.353	3.284	4.337	7.727
High									
County	1.061	1.183	1.780	1.061	1.183	1.732	1.013	1.431	2.217
Town	.395	.360	.335	.330	.410	.622	.372	.526	1.015
School	3.266	3.746	5.363	3.266	3.746	5.863	3.332	4.966	8.128
Wyoming									
Low									
County	6.454	8.537	14.413	6.542	7.387	14.673	6.135	8.381	13.479
Town	2.158	3.082	5.547	2.475	2.831	5.657	2.332	3.209	5.163
School	8.032	11.157	13.955	8.528	9.653	17.356	7.967	10.736	17.647
Probable									
County	6.535	9.455	15.13	6.749	9.608	15.677	...	8.885	14.013
Town	2.513	3.623	5.520	2.355	3.690	6.042	...	.527	5.387
School	8.537	12.495	19.6	8.773	12.622	20.755	...	9.049	18.432
High									
County	6.623	13.922	15.67	6.990	14.134	18.706	...	6.625	16.681
Town	4.013	5.430	6.10	4.335	5.490	7.313	...	5.135	6.435
School	9.452	1.524	25.6	...	13.500	25.745	12. ...	16.541	24.034

.. .2
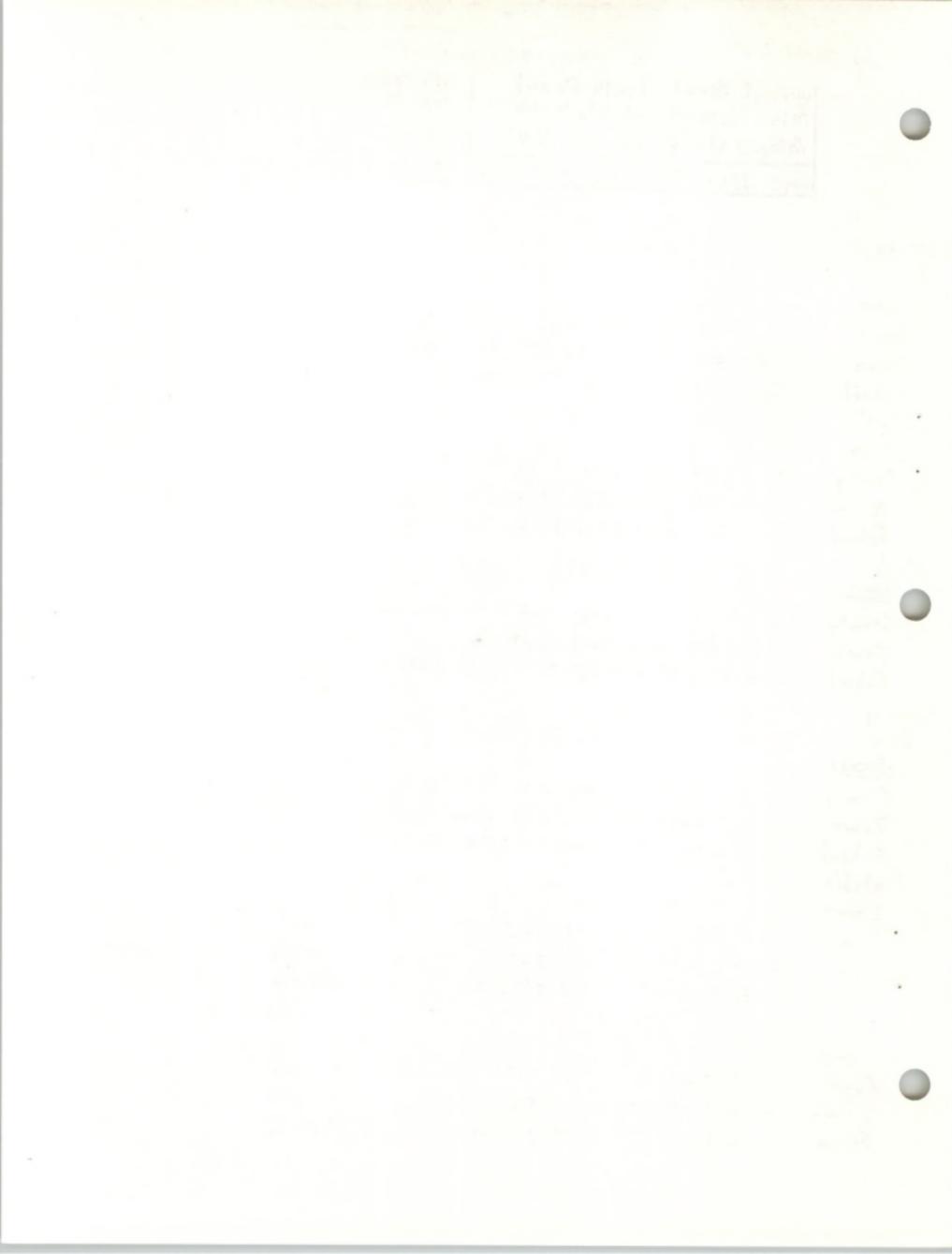
be developed in Montana which will result in expenditures for public services. For the probable scenario, town expenditures are projected as $364,000 in 1980 and increase to $554,000 by 1985 with an additional increase of $395,000 by 1990. The initial expenditure impact of this alternative results in county expenditures decreasing slightly in 1980 but increasing thereafter. The actual expenditure impact associated with this alternative at the county level is a 17.3 percent increase in 1985 and a 20.3 percent increase in 1990.

The school expenditure impact is initially small, less than a one percent increase in 1980. However, school expenditures increase significantly in 1985, 27.3 percent, and in 1990, 31.7 percent. These increased expenditures by each governmental unit are directly related and attributable to the development of the Pearl Mine under this alternative. By 1990 the projected county expenditures may range from $2.047 to $2.217 million with a probable expenditure of $2.142 million. The projected town expenditures will range from $867,000 to $1.015 million with a probable expenditure of $949,000. School expenditures will range from a minimum of $17.224 to $8.128 million.
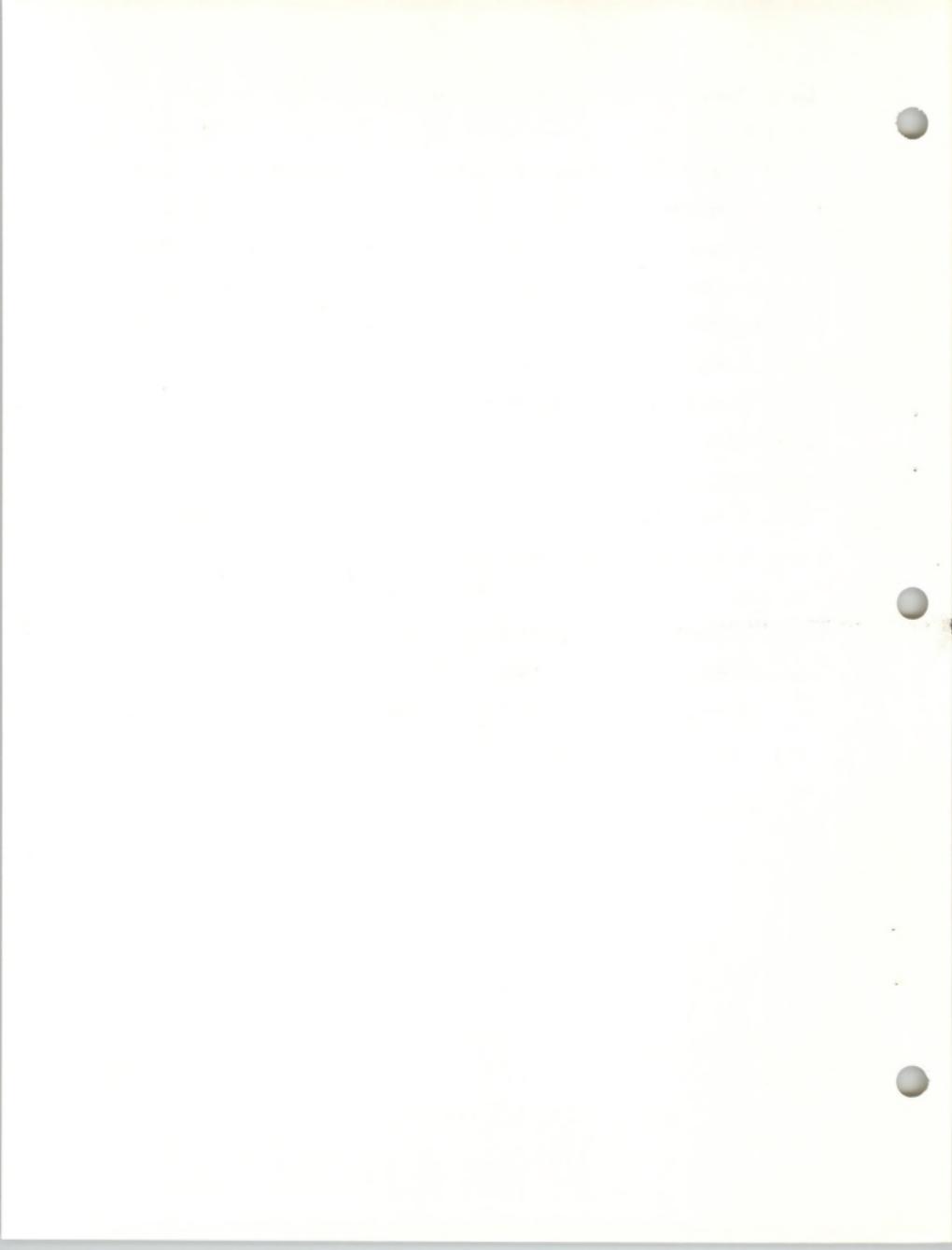
The impact of development activities on the expenditures of local units of government in Wyoming is a positive relation. As development occurs each unit of local government must increase their expenditures to meet the increasing demand for public services. Without the development of the Pearl Mine, county expenditures increase from $6.586 million in 1980 to $6.719 million in 1990, while town expenditures increase $3.423 million and school expenditures increase $11.727 million over the same period.

The influence of the Pearl Mine development with residence of miners i Wyoming is a positive change in expenditures for each unit of government. In 1980, county, town and school expenditures would be increased $135,000, $53,000 and $184,000 respectively under this alternative and similar expenditures increases are indicated over the time span.

As could be expected, the projected expenditures of Wyoming's local government units are reduced if the Pearl Mine development occurs with 50 percent of the miners residing in Montana. The difference in expenditures at the 1990 level are $1.355 million for county, $.549 million and $1.886 less under this alternative than if Pearl Mine is not developed.

The overall influence on development is an increase in government expenditures without and with the development of the Pearl Mine if contained in Wyoming related to miners residence. Additionally, these expenditures increase over a period of time and the influence of miners residing distributed between Montana and Wyoming does reduce the revenue expenditures by local Wyoming governmental units.
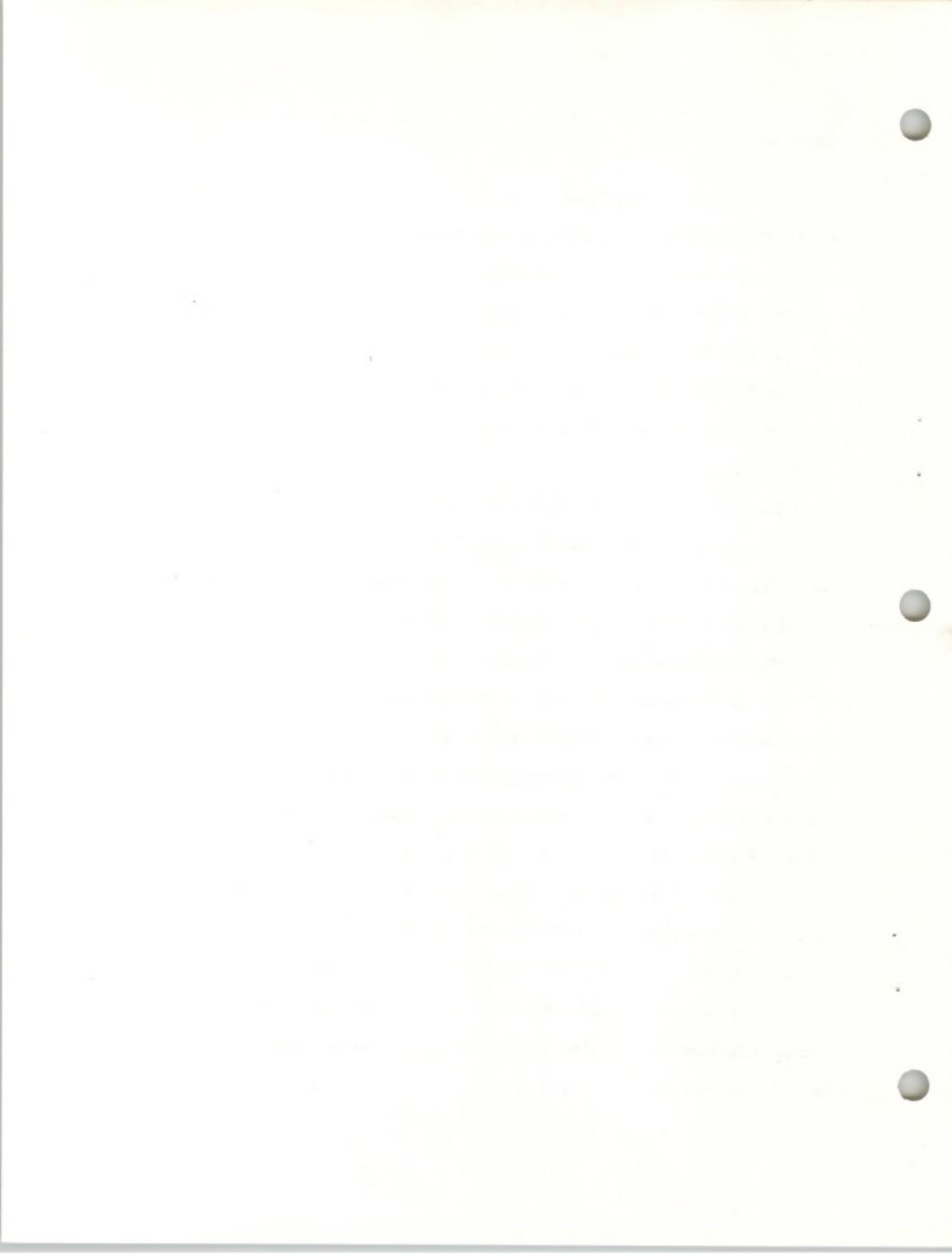
G. Surpluses and Deficits

The projections of surpluses or deficits are generated by the model for each local governmental unit within the segments of the impacted area. The surplus or deficit is the difference between revenues generated and expenditures for each governmental unit within each alternative set and each scenario. These data demonstrate the impact of development in net terms based on projected demands for public services associated with each alternative. The surplus exists when projected revenues are in excess of projected expenditures. This situation would indicate the increased demand for public services is met with an addition residual in revenue. The deficit situation would exist when demand for public services is in excess of revenues generated. This situation would indicate revenues are insufficient to meet the total demand for public services provided by each unit of government.

In general, the demand for public services is met in the State of Montana with a surplus existing in each alternative. However, the demand for services is, in general, not met for the impacted area in Wyoming. As such Montana incurs a surplus, positive values, and Wyoming incurs a deficit, negative values (Table 6).

The probable scenario for Montana, without the development of the Pearl Mine, indicates a surplus for each unit of government at each time interval. Additionally, this surplus increases initially, 1980 to 1985 and then decreases to 1990. The implication of this surplus indicate, the current development activities in generating more revenues than expenditures in Montana. However, over a period of time the magnitude of this surplus will decrease due to increased demand for services (expenditures) which is greater than the increased revenues generated by development. Big Horn
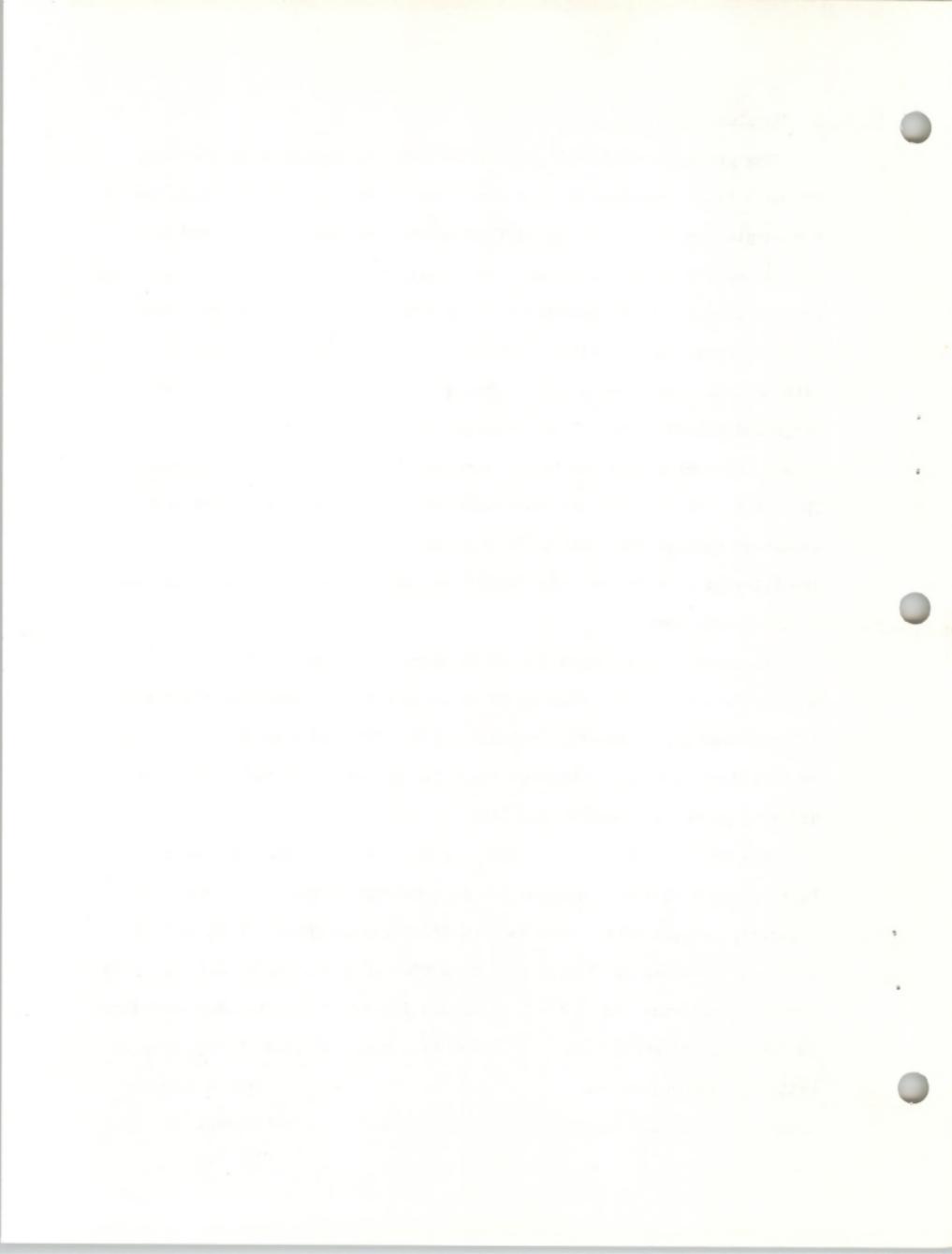
Table 6
Surplus/
Deficits

... for 1980, 1985 and 1990.

	Without Pearl Mine Wyoming Miners Only			With Pearl Mine Wyoming Miners Only			With Pearl Mine 50-50 Montana Wyoming Miners		
	1980	1985	1990	1980	1985	1990	1980	1985	1990
Montana									
Low									
County	.541	.722	.277	.541	.732	.357	.650	.632	.149
Town	-.444	-1.295	-1.125	-.437	-1.295	-1.123	-.042	.084	.239
School	3.273	3.613	2.173	3.273	3.723	2.273	4.252	4.175	2.305
Probable									
County	.661	1.303	.877	.661	1.333	.757	.753	1.236	.675
Town	-.439	-1.295	-1.125	-.439	-1.295	-.125	.223	.187	.336
School	3.430	5.197	3.633	3.430	5.462	3.753	4.537	5.135	3.135
High									
County	.665	1.723	1.277	.661	1.733	1.357	.752	1.611	1.019
Town	-.439	-1.295	-1.125	-.439	-.235	-.125	.054	2.614	.402
School	3.430	6.523	5.015	3.430	6.739	5.251	4.611	6.134	3.724
Wyoming									
Low									
County	-5.252	-6.999	-12.537	-5.110	-5.833	-12.773	-4.790	-6.932	-11.637
Town	-.837	-1.379	-3.160	-.812	-.897	-3.201	-.830	-1.475	-2.936
School	4.377	2.752	-3.753	4.629	4.751	-3.826	4.117	2.017	-3.545
Probable									
County	-5.146	-7.341	-3.394	-5.250	-7.969	-13.574	-4.373	-7.717	-12.176
Town	-.310	-1.552	-3.318	-.801	-1.557	-3.372	-.826	-1.635	-3.090
School	4.553	2.502	-3.973	4.372	2.606	-4.054	4.257	1.456	-3.679
High									
County	-9.241	-11.766	-15.315	-9.246	-11.837	-16.103	-8.100	-12.446	-14.133
Town	-2.133	-2.553	-3.780	-2....	-2.517	-3.937	-1.894	-2.309	-3.433
School	.732	.911	-3.926	...	.990	-4.117	11.500	...	-3.571
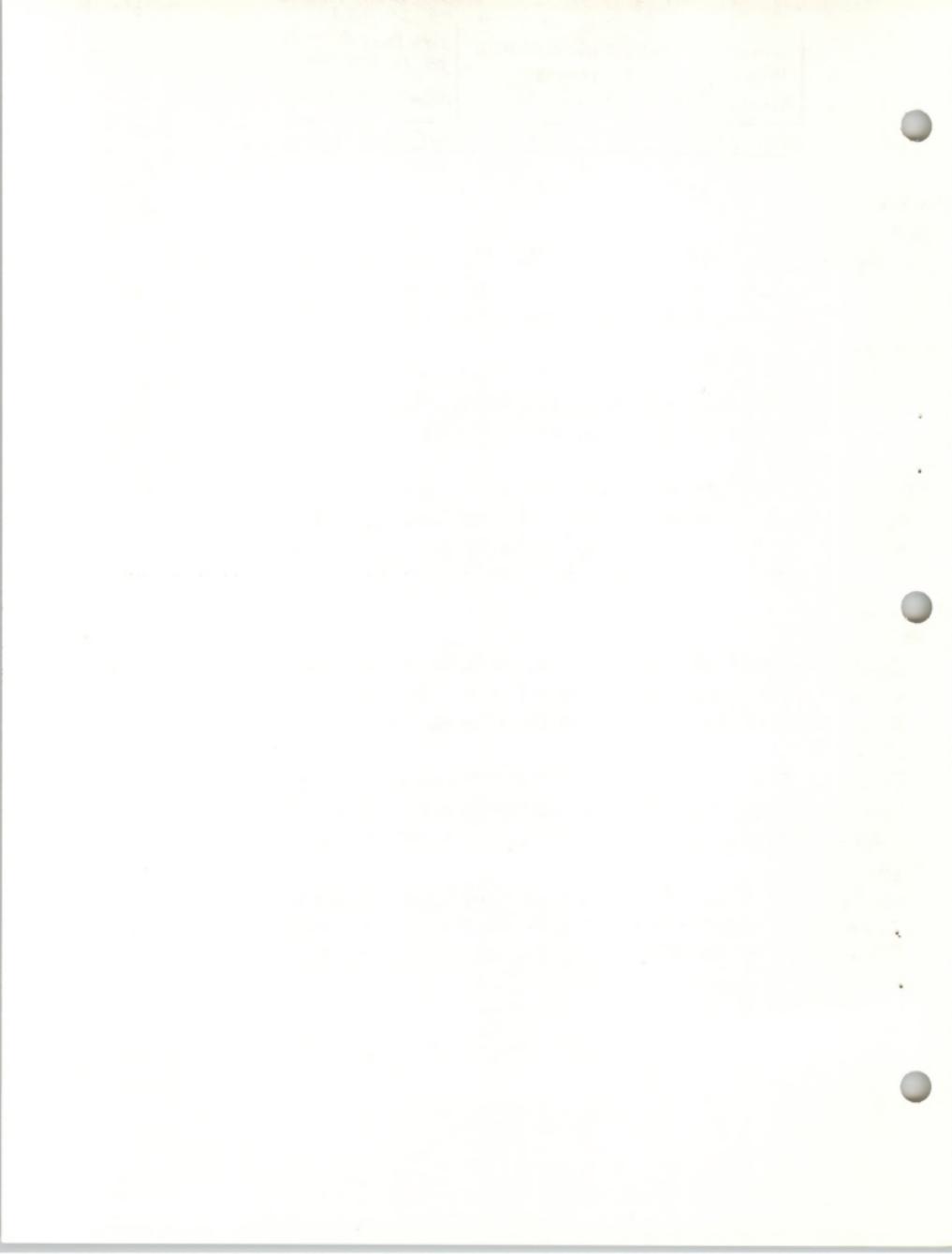
County may anticipate a surplus of $661,000 in 1980, with an increase of 111.3 percent by 1985 and a decreased surplus of 32.7 percent in 1990. The school may anticipate a surplus of approximately $3.4 million by 1980, $5.2 million by 1985 and $3.7 million by 1990. With this alternative set, the county for 1990 may expect the surplus to range from a low of $541,000 (low scenario) to a maximum surplus of $1.277 million. Schools may expect a surplus range from $3.273 million to $3.430 for 1990.

The impact of the Pearl Mine with miners residing in Wyoming is an increase in the existing surplus for government units in Montana. Initially, 1980, the impact on the surplus is non-existing with Pearl Mine development. However, once the mine begins operation the surplus for each unit increases. The probable scenario indicates county surpluses will increase $80,000 in 1985 due to the development of the Pearl Mine while the school surplus increase is $265,000. As with the previous set, this set indicates the surplus for each unit will increase initially (1985) and then decrease in 1990. The 1990 surplus for the county may range from $357.000 to $1.357 million while the school surplus ranges from $2.278 million to $5.281 million with this set.

The third alternative set, the development of the Pearl Mine with miners evenly distributed between Montana and Wyoming, has impact differences than the other sets. This set includes a town which exists in Montana and a surplus is generated at each time interval for this town. Although the town surplus is small, it does increase over time. In the probable scenario, county surplus is $23,000 in 1980 and increases to $336,000 by 1990. The impact of this alternative on county surplus is an increasing influence in 1980.
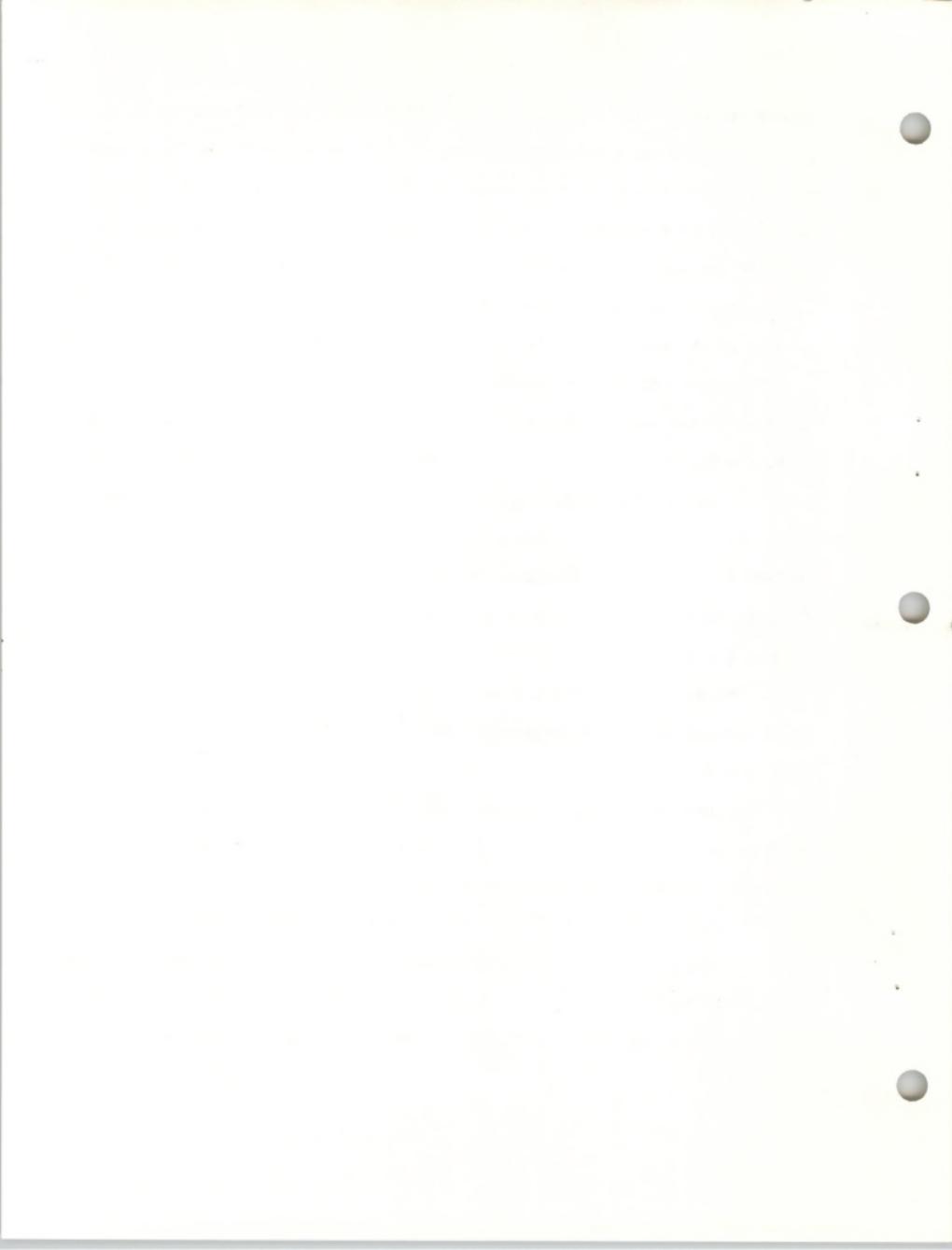
This alternative increases the surplus $97,000 over alternative one and alternative two. However, this set reduces the county surplus in 1985 and 1990 when compared with other alternatives. The school surplus is influenced in a pattern similar to county surplus for this alternative. Initially the school surplus is increased over other alternatives but becomes less in 1985 and 1990.

With the development of the Pearl Mine and a town in Montana, county surplus may range from $149,000 to $1.019 million by 1990. The town's surplus may range from $239,000 to $402,000 while the school surplus ranges from $2.305 to $3.724 million by 1990.
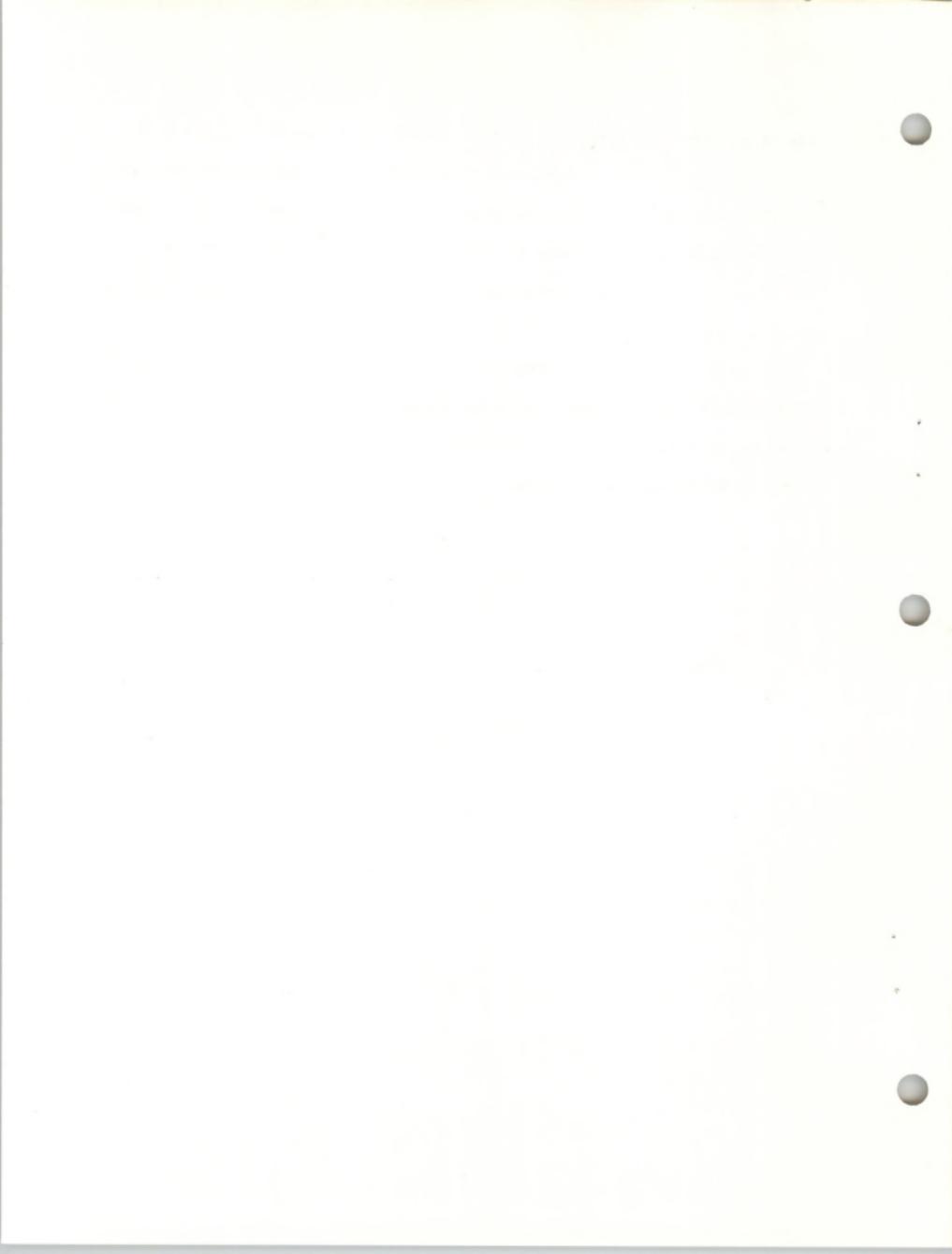
Continuation II. ` G. Surpluses-Deficits (Wyoming)

The impact of development activities in Wyoming and in particular
on local units of government in Wyoming relative to surpluses and
deficits, indicates that county and town units of government will be
operating in deficit positions over the projected time span. In essence,
the increase in revenue and increase in expenditures, based on current
statutory taxing provisions, will result in a segment of consumers demand
for public services will not be met. The magnitude of this deficit increases
over time for this county and town units of government under each scenario
without development of the Pearl Mine. The school system will initially
have a surplus but over time this will change to a deficit by 1990.

The impact from development of the Pearl Mine with all Wyoming miners
increases the deficit for county and town initially and over time provides
increments to these deficits. In the probable scenario, the actual deficit
increases attributed to the Pearl Mine are $104,000 in 1980, $128,000
in 1985 and $280,000 in 1985 for the county government. For the town,
deficit increases for 1985, and 1990 are $5,000 and $54,000 respectively.
The initial impact of the Pearl Mine development on school surplus is to
increase the surplu $189,000 in 1980 and $104,000 in 1985 but it increases
the deficit $76,000 in 1990.

If the Pearl Mine development occurs with miners evenly distributed
between Montana and Wyoming, the impact of the deficit position of Wyoming's
county and town in decrease in the magn. of the deficit for each year
of the time peri . This development al increases the school surplus in 1980
and 1975 and de ses magnitude of the sch l deficit in 1990.
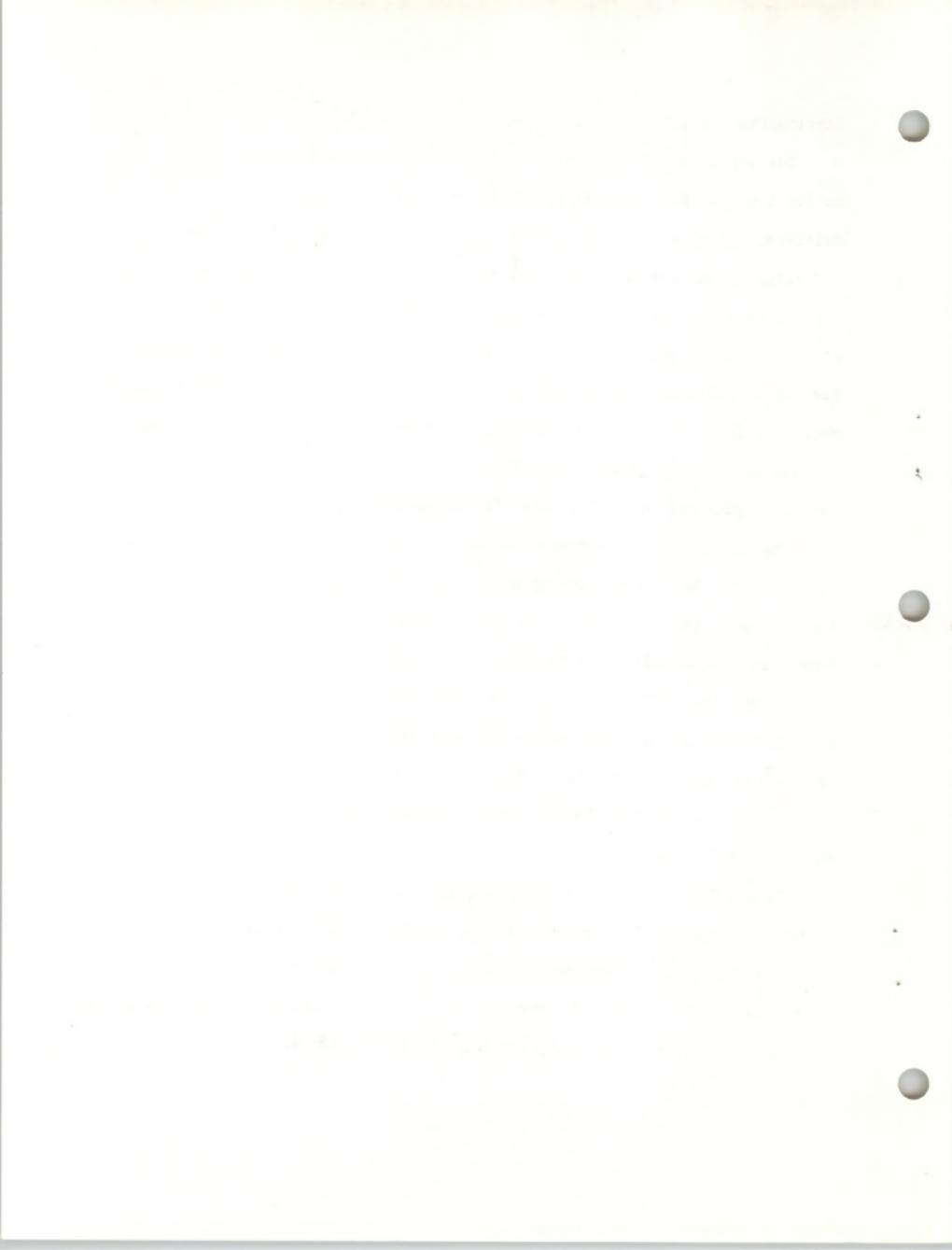
The impact of development activities on Wyoming and its local units of government is to create deficit positions in the short and long run for the county and town and in the long run for schools, also. The impact of the Pearl Mine increases these deficits when miners reside in Wyoming and reduces these deficits if miners residence is distributed between Wyoming and Montana.
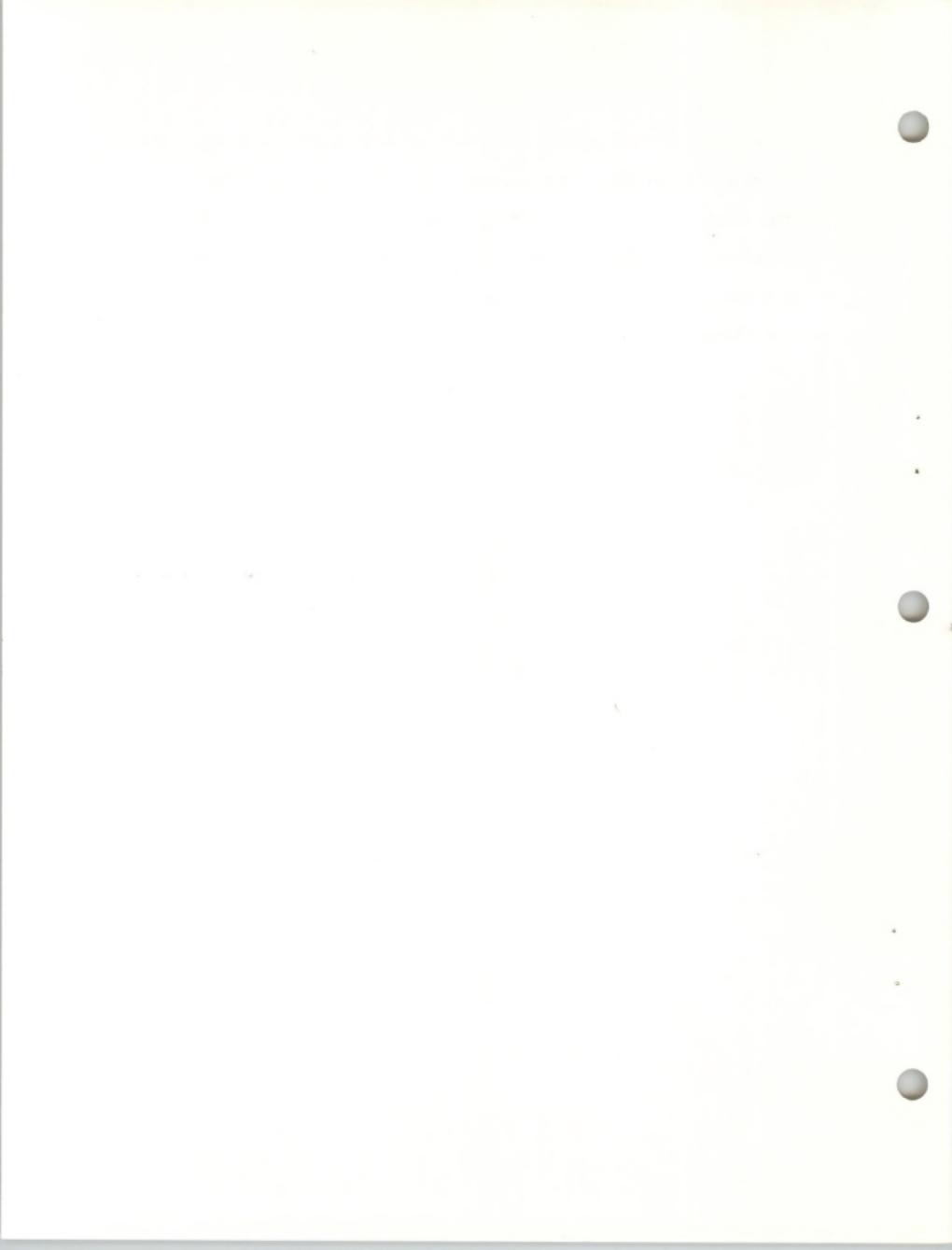
H. Prices

The Coal Town II Model projects estimates of the Consumer Price Index based on expected economic activities and policies at the national level with the base year of 1970 (Price Index - .100).

The data presented in Table 7 illustrate increased consumer prices for the impacted area for each five year intervals from 1975 to 1990. The rate of price increase is constant among the three possible scenarios in each segment of the impacted area. Additionally, the price index increases for each set of alternatives at the same rate and magnitude. Regardless of which alternative set and which scenario is pursued, consumer prices will increase over the projected time period and the same rate. Consumer prices have increased approximately 33 percent from 1970 to 1975 in the impacted area and will increase an additional 37 percent by 1980. Between 1980 and 1990, consumer prices are projected to increase 34 additional percent. In comparing the 1970 consumer prices to 1990 consumer prices, consumer prices will have doubled by 1990. This implies that consumers in the identified impacted area will incur increased costs in purchasing goods and services. The magnitude of this increase over the time period to 1990 is significant and will occur regardless of which type of alternative set and scenario development is pursued.
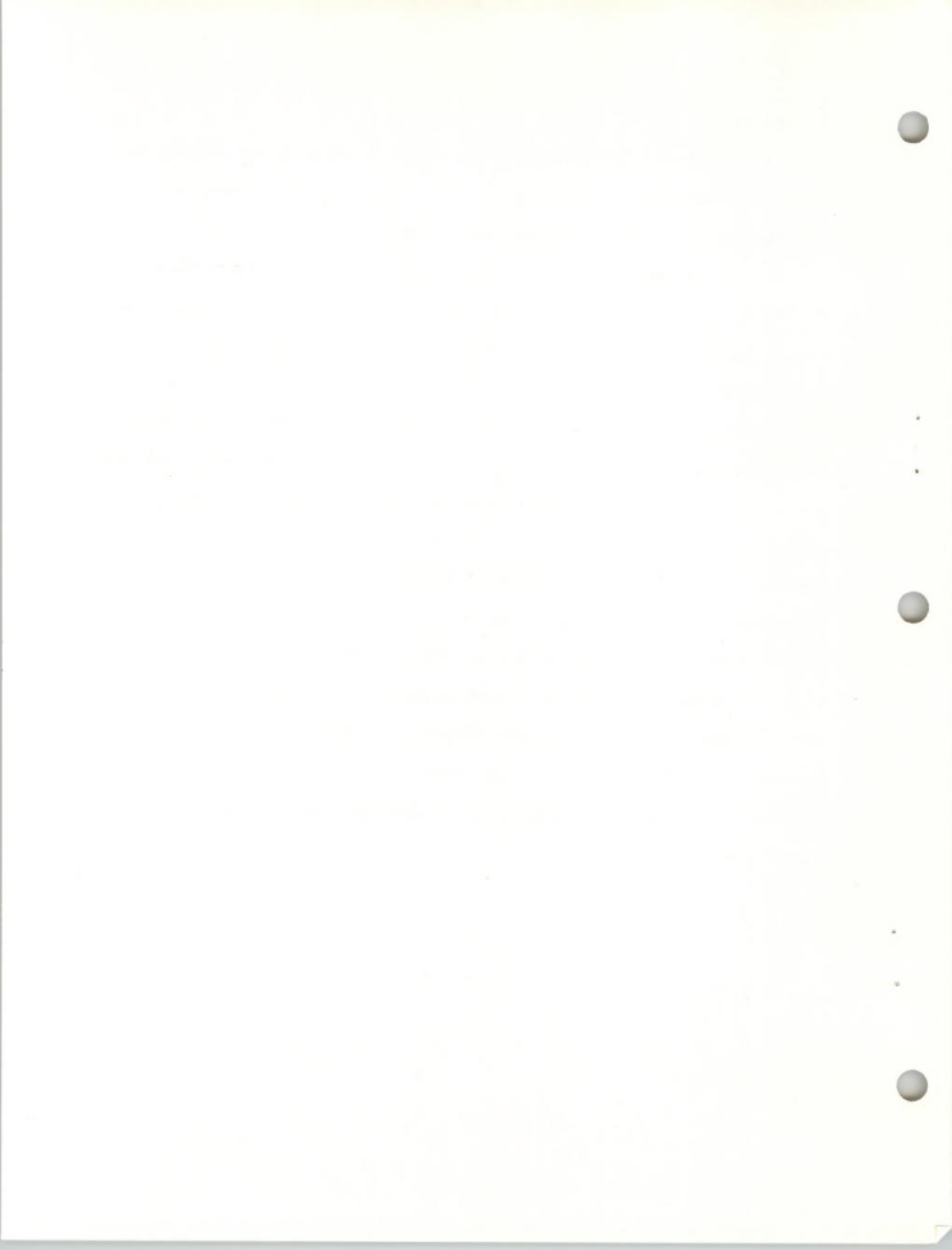
Table 7

Projected Consumer Price Index for 1975, 1980, 1985 and 1990
for Each Segment of the Impacted Area Based on 1970 Base Year

|	1975	1980	1985	1990
Montana				
Low	1.3335	1.7019	1.7579	2.0379
Probable	1.3375	1.7019	1.7579	2.0379
High	1.3375	1.7019	1.7579	2.0379
Wyoming				
Low	1.3339	1.7019	1.7579	2.0379
Probable	1.3375	1.7019	1.7579	2.0379
High	1.3375	1.7019	1.7579	2.0379
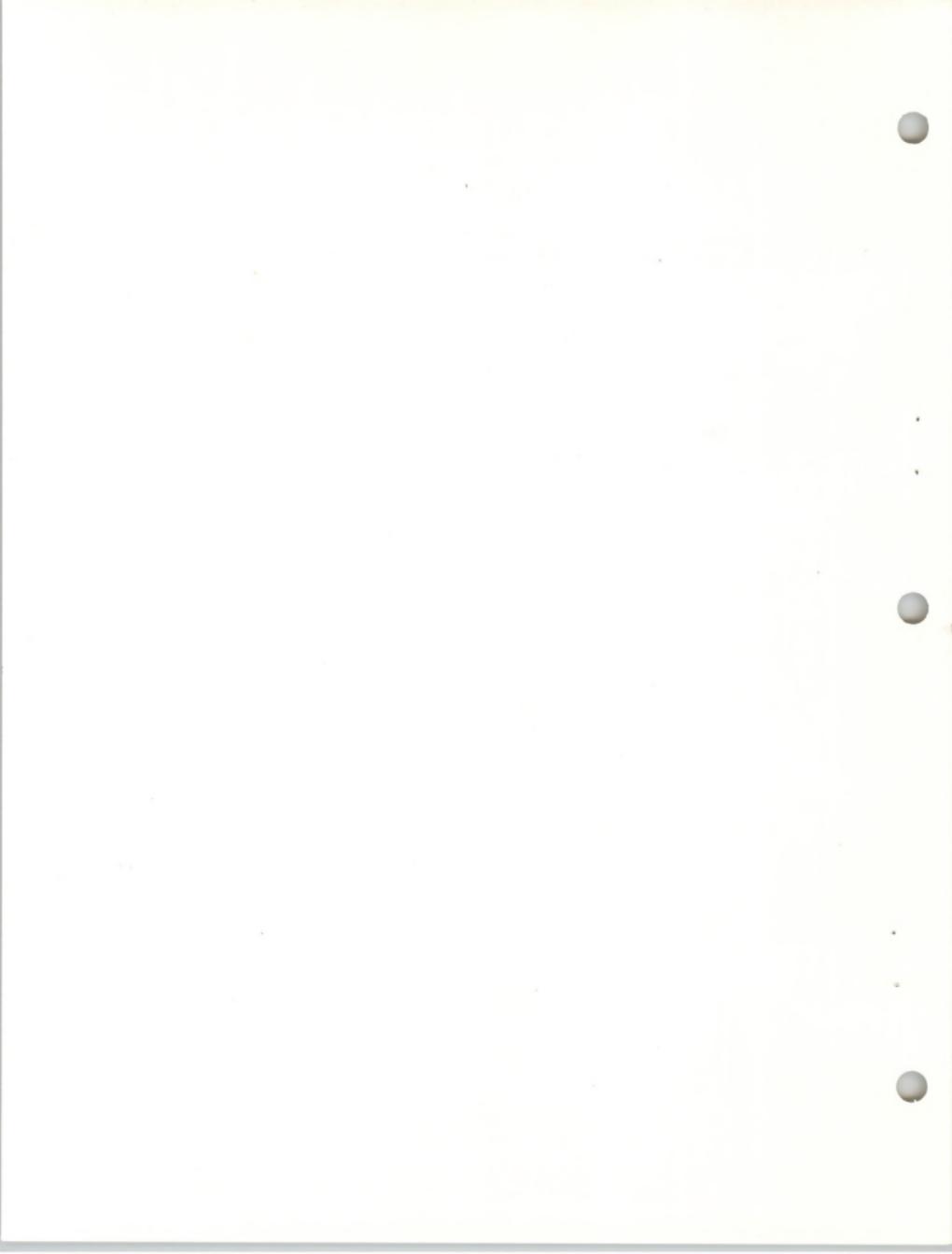
I. Ancillary Wages

Projections of wages for ancillary employees are projected for each
year for each segment of the impacted area with each alternative set and
each possible scenario. The projected wages are average wages which are
expected to occur for each specific time period for employees who are
secondary employees (other than mining, manufacturing, federal, agricultural
and transportation employees).

These average wages reflect and are influenced by changes in tons of
coal mined, employment and population. As development occurs, changes will
occur in tons of coal mined, number of miners, number of individuals in
the economic base, number of individuals in ancillary employment and
population within a segment of the impacted area. As such, the demand for
ancillary employees change as does the supply of ancillary employees over
time. The results of these changes are reflected in ancillary wages which
also change over time. For a certain time intervals, ancillary wages
may be relatively low compared to another time period. (Table 8).
In general, ancillary wages tend to be very unstable over time regardless
of the alternative set and scenario pattern inspected.

The ancillary wage impact in Montana illustrates two specific character-
istics from 1975 to 1990 when all miners reside in Wyoming regardless of the
development of the Pearl Mine. First, ancillary wages increase over this
time span from $4,875 in 1975 to $7,124 in 1990, an increase of 46.1 percent.
Second, wages tend to increase rapidly in the early stages of development,
18.5 percent from 1975 to 1980, increase at a reduced rate over the middle
segment of the time span, 3.7 percent from 1980 to 1985, and increase rapidly

|	Without Pearl Mine Wyoming Miners Only				With Pearl Mine Wyoming miners only				With Pearl Mine 50-50 Montana Wyoming Miners			
	1975	1980	1985	1990	1975	1980	1985	1990	1975	1980	1985	1990
Montana												
Low	4375	5792	6002	7124	4375	5792	6002	7124	5150	4875	5994	7013
Probable	4375	5792	6002	7124	4375	5792	6002	7124	5150	4875	6035	7243
High	4375	5792	6002	7124	4375	5792	6002	7124	5150	4875	6031	7266
Wyoming												
Low	7650	7802	6395	7532	7673	4875	6357	7528	7536	4875	6043	7495
Probable	7673	4875	6933	7560	7673	4875	6989	7573	7535	4875	6433	7518
High	7528	7520	7316	7454	7673	7563	7031	7466	7535	7167	7254	7486

Table B: Ancillary Wages in Thousands of Dollars for Each Segment of the Impacted Area by Type of Alternative and Scenario for 1975, 1980, 1985 and 1990.
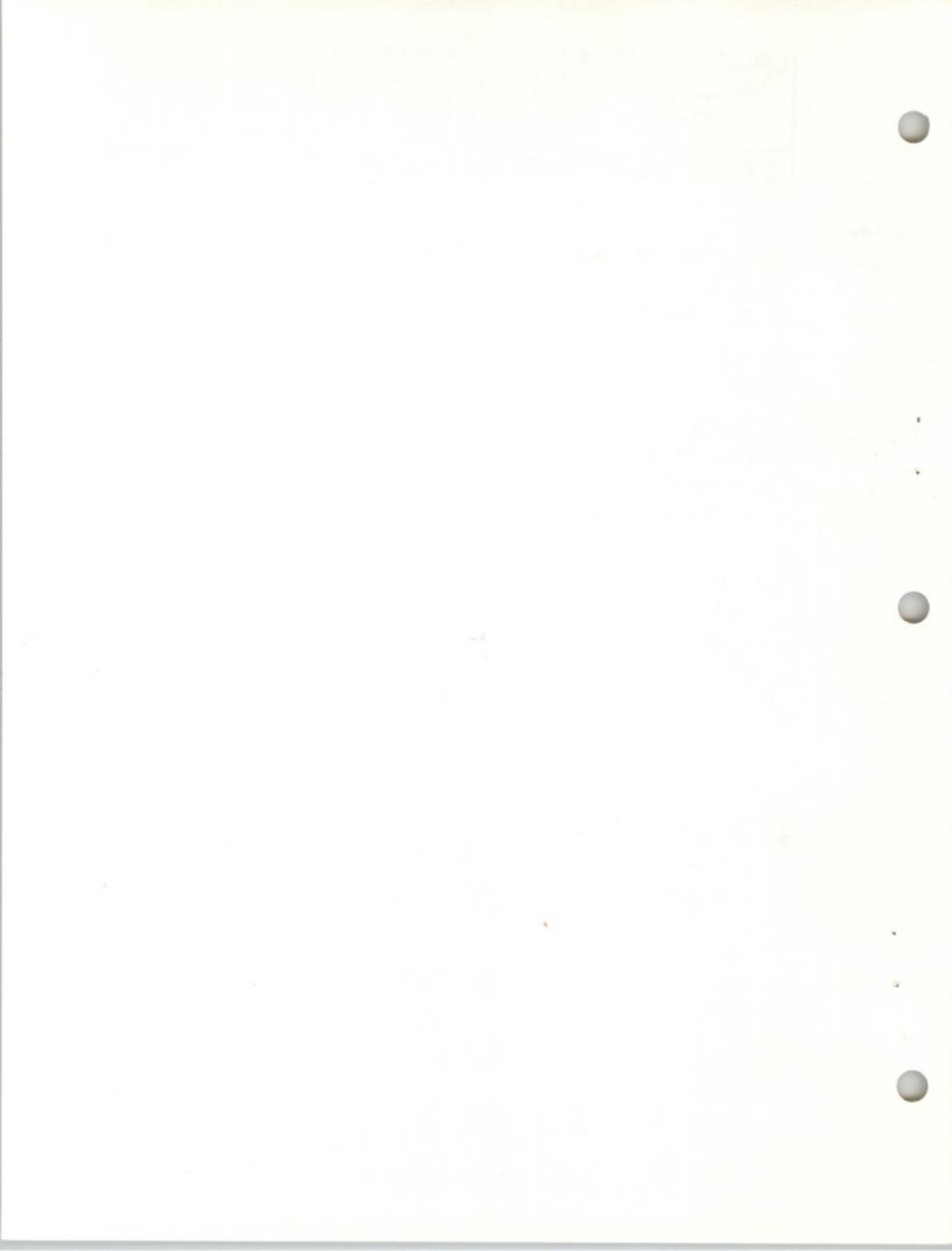
in the early stages of development, 18.8 percent from 1975 to 1980, increase
at a reduced rate over the middle segment of the timpe span, 3.6 percent from
1980 to 1985, and increase rapidly in the later stages, 18.7 percent from
1985 to 1990. These wage increases are identical regardless of the scenario
or whether Pearl Mine is developed or not.

However, if the Pearl Mine is developed with an even distribution of
mienrs residences between Wyoming and Montana, significant ancillary wage impacts
occur. Under this alternative set, ancillary wages differ to a small degree
only between the three scenarios. Secondly, ancillary wages become very
unstable over time under this alternative. In the probable scenario,
wages are $5,150 in 1975, decrease to $4,875 in 1980, increase to $6.035
in 1985 and increase to $7,243 in 1990. In general, Montana ancillary
wages are high under this alternative than in the alternatives where miners
would not reside in Montana. The impact of the Pearl Mine development on
ancillary wages in Montana will exist only if a segment of miners from this
mine reside in Montana. This impact, in general, will result in increased
ancillary wages in Montana.

The impact of existing and proposed development on ancillary wages in
Wyoming is influenced by the alternative set and scenario pursued. The
general pattern of ancillary wages over time is relatively high initial
wages (1975), lower wages during intermediate time period (1980 to 1985)
and relatively high wages in later stage (1990). For example, in the probable
scenario, without the Pearl Mine, 1975 wages are $7,573 decrease to $4,875 in
1980, increase to $6,035 in 1985 and additionally increase to $7,560
in 1990.
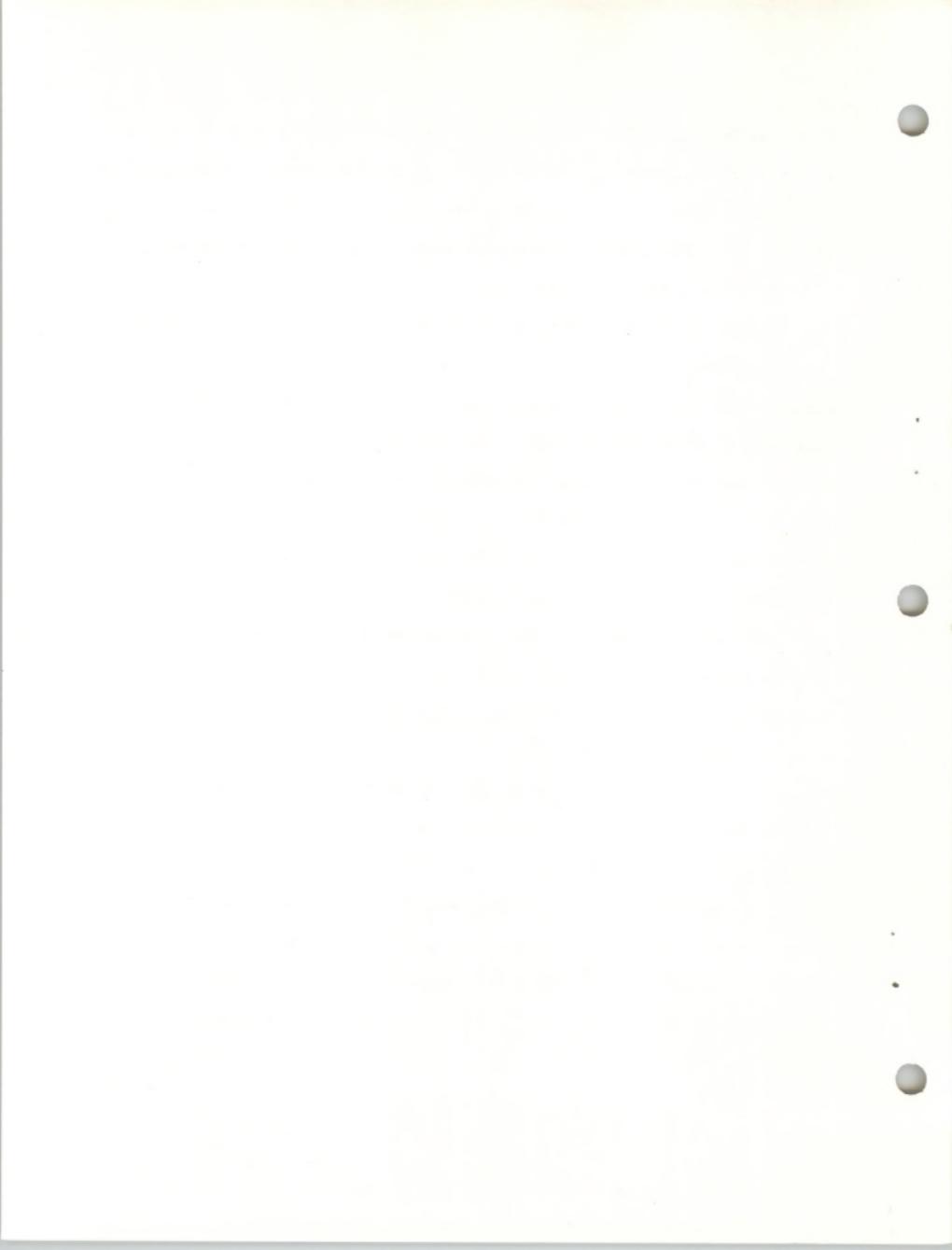
The impact of ancillary wages of the Pearl Mine development is measured by the difference between ancillary wages for the two alternative sets. If wage comparisons are made between ancillary wages for the probable scenario without the Pearl Mine and with the Pearl Mine when all miners reside in Wyoming, ancillary wages are very similar if not identical. As such the impact on ancillary wages due to the development of the Pearl Mine is very minimal.

The ancillary wage impact on Wyoming wages rates is present if the Pearl Mine is developed and miners are evenly distributed between Montana and Wyoming. The impact of this alternative compared to the previous alternative, Pearl Mine with all miners in Wyoming, is a decrease in wages initially from $7,673 to $7.535 for 1975 with identical wages in 1980. Under this alternative ancillary wages would be $424 more in 1985 but $55 less in 1990.
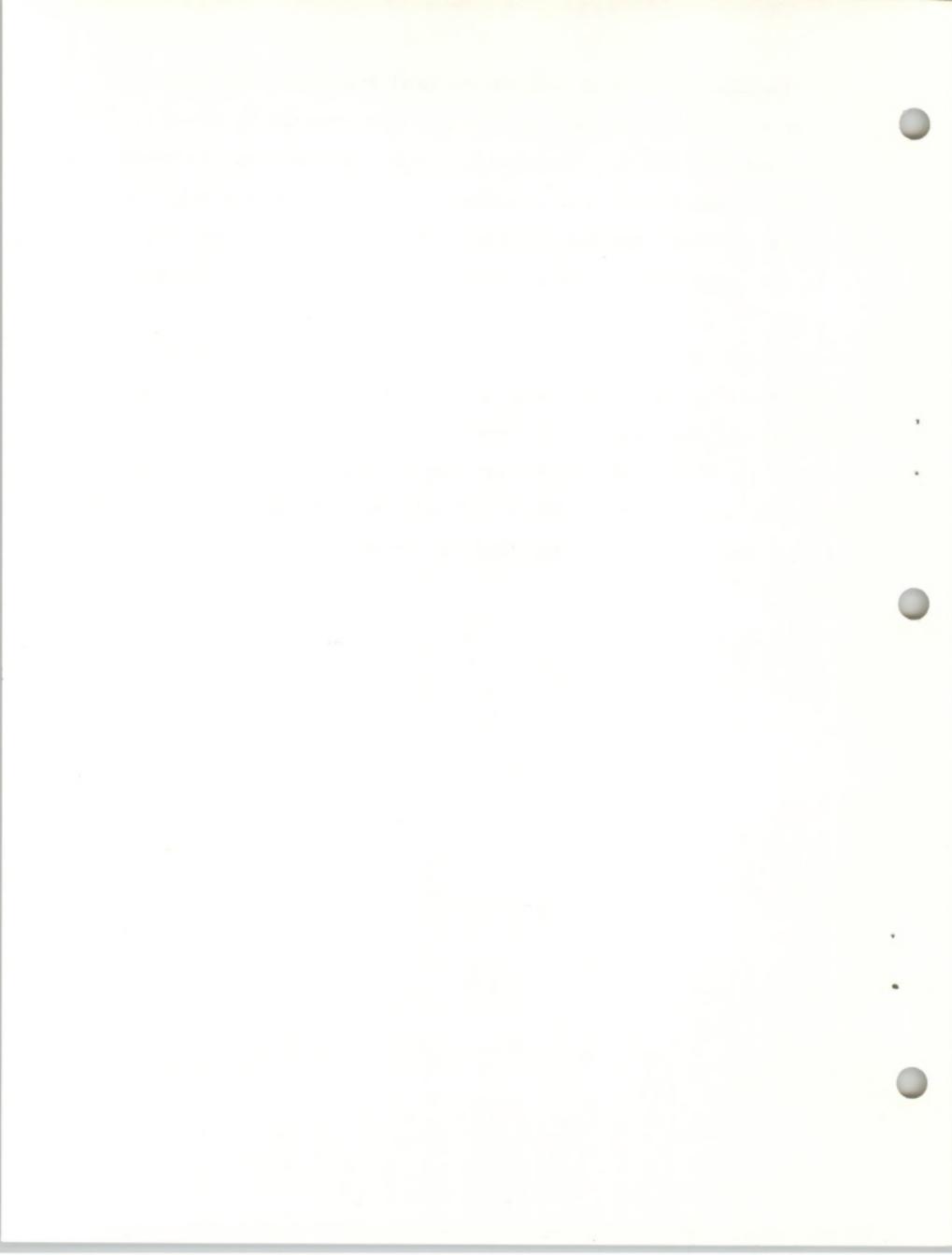
J. Employment – Population Ratios

Employment–population ratios are projected by the Model for each alternative set and scenario over time. These ratios provide a relative measure of number of individuals employed to the total population for each segment of the impacted area (Table 9).

As with previous variables in Montana, the employment–population ratios are affected with mining development, other than Pearl Mine development when miners residence is limited to Wyoming. In the probable scenario without Pearl Mine, the ratio increases from a low of .3997 in 1975 to a maximum of .4425 in 1985 and decreases to .4256 in 1990. The precise ratios are indicated if Pearl Mine development occurs with Wyoming miners only. In the alternative set for which Pearl Mine is developed and miners are distributed between Montana and Wyoming, the probable ratios is .3997 in 1975, increase to a maximum of .4610 in 1985 and decreases to .4400 in 1990. Under this alternative, the ratio of people employed to population is increased for Montana's segment of the impacted area due to the development of the Pearl Mine. Although the relative differences in employment–population ratios tends to be small the absolute differences may be rather large. For example, the difference between the 1975 and 1985 ratios in the probable scenario with miners distributed in Wyoming and Montana is .0703. The employment in 1975 was 4147 compared to 6149 in 1985 which is an employment increase of 2000. The population in 1975 was 10,373 compared to 13,338 in 1985 which was an increase of 2965. In this particular example, if three individuals moved into this area who became employed.

|	Without Pearl mine, Wyoming Miners Only				With Pearl Mine, Wyoming Mines Only				With Pearl Mine, 50-50 Montana-Wyoming miners			
	1975	1980	1985	1990	1975	1980	1985	1990	1975	1980	1985	1990
Montana												
Low	.3997	.4314	.4435	.4256	.3997	.4314	.4425	.4256	.3997	.4433	.4574	.4357
Probable	.3997	.4314	.4425	.4256	.3997	.4314	.4425	.4256	.3997	.4473	.4610	.4400
High	.3997	.4314	.4425	.4256	.3997	.4314	.4425	.4256	.3997	.4505	.4611	.4444
Wyoming												
Low	.4419	.4636	.4632	.4401	.4421	.4724	.4720	.4412	.4381	.4625	.4621	.4357
Probable	.4421	.4732	.4750	.4452	.4421	.4789	.4769	.4455	.4391	.4655	.4559	.4395
High	.4463	.5355	.5361	.5493	.4421	.4855	.4861	.4474	.4382	.4782	.4851	.4434

Table 9: Employment-Population Ratios for Each Segment of the Impacted Area by Type of Alternative and Scenario for 1975, 1980, 1985 and 1990

The impact on employment-population ratios in Wyoming is similar to that of Montana in that ratios are low initially in 1975 increase to maximum in 1980 or 1985 and decrease in 1990. However, the development of the Pearl Mine does increase the employment-population ratio when all miners reside in Wyoming. In the probable scenario without the development of the Pearl Mine, employment-population ratios are .4421, .4732, .4750 and .4452 for each five year interval. With the development of the Pearl Mine these ratios ae .4421, .4769, .4769 and .4466 for 1975, 1980, 1985, and 1990, respectively. It is important to emphasis that although the increase in relative terms are small the absolute increase may be large and those increases are attributable to the development of the Pearl Mine.

As may be expected, the development of the Pearl Mine with even distribution of miners between Montana and Wyoming generate employment-population ratios which are not as high in Wyoming as if all miners lived in Wyoming. If this alternative set is pursued, employment-population in Wyoming will be reduced by .0040 for 1975, .0114 for 1980, .0110 for 1985 and .0031 in 1990.

The employment-populaton ratios differ among the alternative sets and scenarios between the segments of the impacted area. In general, employment-population ratios increase as development occurs initially but then decreases. The development of the Pearl Mine will increase employment-population ratios in Wyoming if all miners reside in Wyoming. If the Pearl Mine is developed with miners distributed between Montana and Wyoming, employment-population ratios will increase for Montana and decrease for Wyoming. Although the relative changes in the ratios are small, the absolute magnitude of these changes may be large.
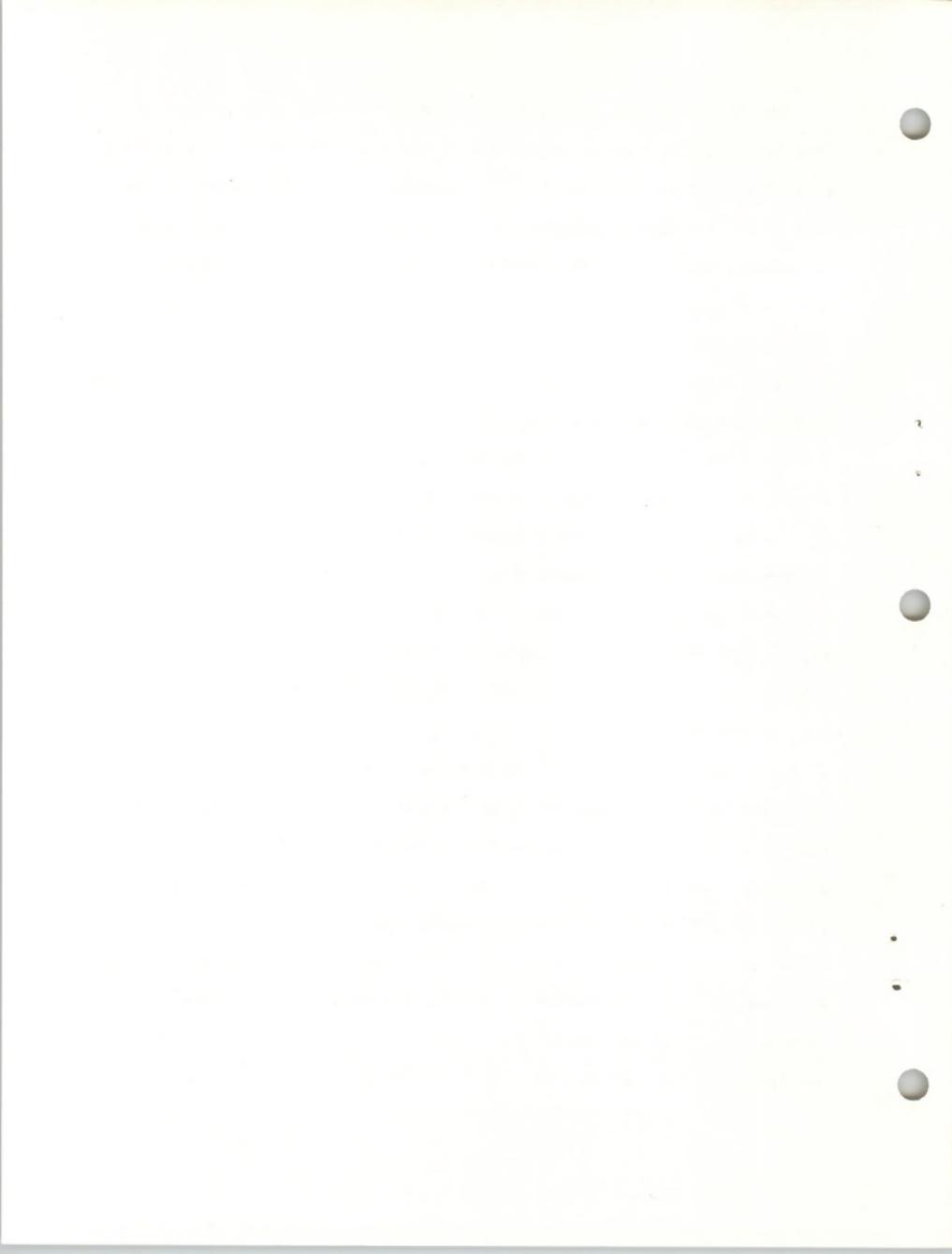
Footnote

[1] The Coal Town II Model is results of research efforts of Dr. Lloyd Bender, Economic Research Service, United States Department of Agriculture, and George Temple, Montana State University, Bozeman, MT.